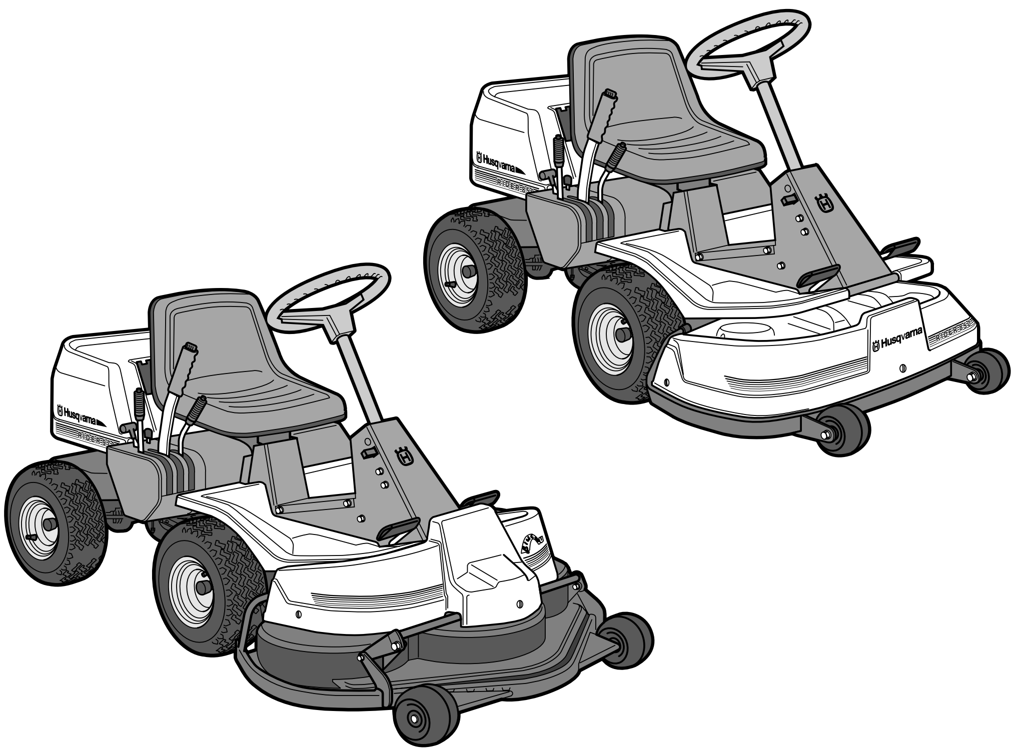


Rider 850/970

Operator´s manual

Please read these instructions carefully and make sure you understand them before using the machine.

101 89 35-26

CONTENTS

GB

Operator's Manual for Rider 850 Rider 970

IMPORTANT INFORMATION

Read through these instructions carefully so that you know how to use and maintain the machine before using it.

For servicing other than described in this manual contact an authorised dealer for parts and service.

WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

1. Safety rules, USA nomenclature

Safe operation practices for ride-on mowers

IMPORTANT!
This cutting machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

I. General operation

1. Read, understand and follow all instructions in the manual and on the machine before starting.
2. Only allow responsible adults, who are familiar with the instructions, to operate the machine.
3. Clear the area of objects such as stones, toys, wire, etc., which could be picked up and thrown by the blades.
4. Be sure the working area is clear of other people before mowing. Stop the machine if anyone enters the area.
5. Never carry passengers.
6. Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
7. Be aware of the mower discharge direction and do not point it at anyone. Do not operate the mower without either the entire grass catcher or the guard in place.
8. Slow down before turning.
9. Never leave a running machine unattended. Always turn off blades, set parking brake, stop engine and remove keys before dismounting.
10. Turn off blades when not mowing.
11. Stop engine before removing grass catcher or unclogging chute.
12. Mow only in daylight or good artificial light.
13. Do not operate the machine while under the influence of alcohol or drugs.
14. Watch for traffic when operating near or crossing roadways.
15. Use extra care when loading or unloading the machine into a trailer or truck.

II. Slope operation

Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. *All* slopes require extra caution. If you cannot back up the slope or if you feel uneasy on it, do not mow it.

DO

Mow up and down slopes, not across.
Remove obstacles such as rocks, tree limbs, etc.
Watch for holes, ruts or bumps. Uneven terrain could overturn the machine. *Tall grass can hide obstacles.*
Use slow speed. Choose a low gear so that you will not have to stop or shift while on the slope.
Follow the manufacturer’s recommendations for wheel weights or counterweights to improve stability.
Use extra care with grass catchers or other attachments. These can change the stability of the machine.
Keep all movement on the slopes *slow* and *gradual.* Do not make sudden changes in speed or direction.
Avoid starting or stopping on a slope. If tires lose traction, disengage the blades and proceed slowly *straight* down the slope.

DO NOT

Do not turn on slopes unless necessary and then, turn slowly and gradually downhill, if possible.
Do not mow near drop-offs, ditches or embandments. The mower could suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.
Do not mow on wet grass. Reduced traction could cause sliding.
Do not try to stabilize the machine by putting your foot on the ground.
Do not use grass catcher on steep slopes.

III. Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. *Never* assume that children will remain where you last saw them.

1. Keep children out of the mowing area and under the watchful care of another responsible adult.
2. Be alert and turn machine off if children enter the area.
3. Before and when backing, look behind and *down* for small children.
4. Never carry children. They may fall off and be seriously injured or interfere with safe machine operation.
5. Never allow children to operate the machine.
6. Use extra care when approaching blind corners, shrubs, trees or other objects that may obscure vision.

IV. Service

1. Use extra care in handling gasoline and other fuels. They are flammable and vapours are explosive.
   a) Use only an approved container.
   b) Never remove gas cap or add fuel with the engine running. Allow engine to cool before refuelling. Do not smoke.
   c) Never refuel the machine indoors.
   d) Never store the machine or fuel container inside where there is an open flame, such as in a water heater.
2. Never run a machine inside a closed area.
3. Keep nuts and bolts, especially blade attachment bolts, tight and keep equipment in good condition.
4. Never tamper with safety devices. Check their proper operation regularly.
5. Keep machine free of grass, leaves or other debris build-up. Clean up oil or fuel spillage. Allow machine to cool before storing.
6. Stop and inspect the equipment if you strike an object. Repair, if necessary, before restarting.
7. Never make adjustments or repairs with the engine running.
8. Grass catcher components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. Frequently check components and replace with manufacturer's recommended parts, when necessary.
9. Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves and use extra caution when servicing them.
10. Check brake operation frequently. Adjust and service as required.



Danger, keep hands and feet away

Wheel assembly (USA)

To remove tractor from carton:
Remove cardboard outer container from pallet.
- check for any additional loose parts.
- lift seat from unit
- remove parts bag and steering wheel
  - check contents of bag and with inventory list
- remove tire and wheel assemblies from pallet
- remove covers from retaining blocks on axles
- install steering wheel
  - loosen set screw
  - place column over shaft and seat against washer
  - center the wheel
  - tighten the set screw – seat in slot on shaft
  - secure set screw with jam nut
- fasten hitch plate to rear bumper with 2 bolts
- raise and support the rear of the unit
  - install drive wheels and parts
    - large washer
    - spacer
    - wheel and key
    - small washer
    - "E" clip – seat in groove in axles
- lower the unit
- raise and support the front of the unit
  - install front wheels
    - small washer
    - snap ring – seat in groove in axles
- lower the unit
- remove the unit from the shipping pallet by rolling forward to avoid damage to the under-carriage
- install the chute deflector
  - remove front cowling – 3 screws
  - insert pin into bracket and shoulder bolt in hole – nut towards rear
  - install spring – hole on chute to bolt near pulley
- check belts and pulleys
- install cowling

Part Package

4	hubcaps
1	chute deflector
1	B & S manual
6	battery caps
2	ignition keys
2	square keys – drive wheels
2	"E" clips – drive wheels
2	spacers
2	large washers – drive wheels
2	small washers – drive wheels
1	spring – deflector
1	shoulder bolt and nut – deflector
1	hitch bracket
2	bolts
2	washers – front wheels
2	outside snap rings – front wheels
1	pkg battery bolts and nuts

EXPLANATION OF SYMBOLS

These symbols are on the machine and in the operator´s manual.
Study them carefully so that you know what they mean.



Read the operator´s manual.

R
Reverse

N
Neutral



Fast



Slow



Engine off



Battery



Choke



Fuel



Oil pressure



Cutting height



Backwards



Forwards



Ignition



Clutch



Use eye and hearing protection



Clutch in



Clutch out



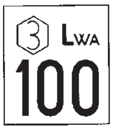
Parking brake



Brake



Warning



Sound level



Warning! Rotating blades



Warning! Risk that the machine can tip over



Never drive across a slope



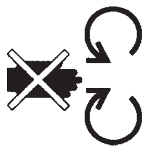
European standard for machine safety



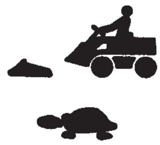
Never use the machine if persons, especially children, or animals, are in the vicinity



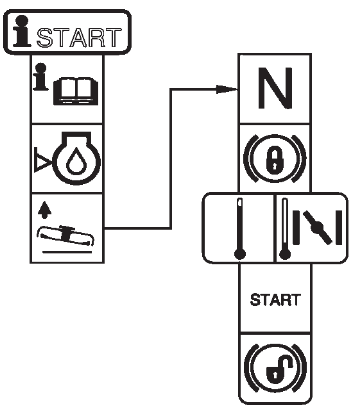
Never carry passengers on the machine or equipment



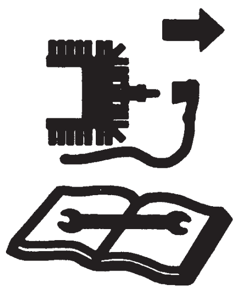
Keep hands and feet away from under the hood when the engine is running



Drive very slowly without the cutting unit



Starting instructions
Read the instructions
Check the engine’s oil level
Lift up the cutting unit
Put the gear shift/hydrostat pedal in neutral
Brake
If the engine is cold use the choke
Start the engine
Release the parking brake before driving



Switch off the engine and take off the ignition cable before repairs or maintenance

SAFETY INSTRUCTIONS

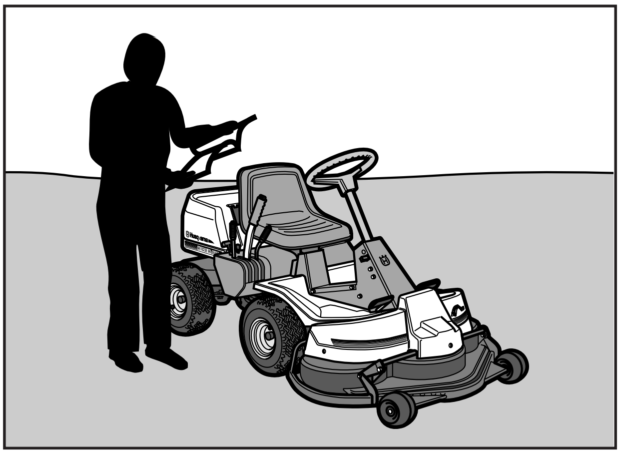
GB

These instructions are for your safety. Read them carefully.

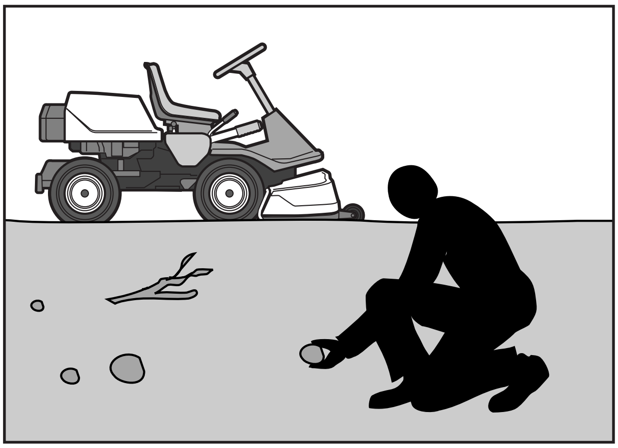
This symbol implies that important safety rules are applicable.
This is for your safety and the operating reliability of the machine.

General use:

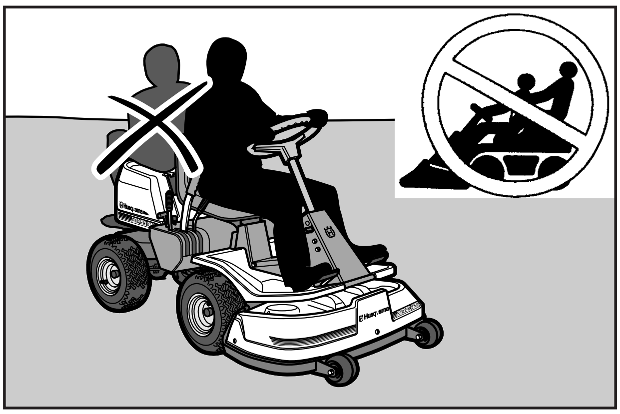
- Make yourself familiar with the controls and how to stop quickly.
- Read all the instructions in Operator's Manual and on the machine before starting it. Make sure you understand them, and then follow them.
- Only allow adults who are familiar with the machine to use it.
- Wear approved protective glasses or a visor during assembly and driving.
- Never use the machine barefoot. Always wear heavy-duty shoes, preferably toe-capped.
- Never wear loose fitting clothes which can fasten in moving parts.
- Clear the area of objects such as stones, toys, and wires, etc. which can be caught up by the blades and thrown out.
- Check that there are no other persons in the area before starting to cut.
- Stop the machine if anyone comes into the work area.
- Never carry passengers.
- Do not cut backwards unless absolutely necessary.
- Always look down and behind before and during reversing.
- Keep an eye on the ejected grass and do not direct it towards anyone.
- Slow down before turning.
- Never leave the machine unattended when the engine is running. Always switch off the blades, pull on the parking brake, stop the engine and take out the keys before leaving the machine.
- Switch off the blades when you are not cutting.
- Only cut in daylight or good artificial lighting.
- Never use the machine when you have consumed alcohol, drugs, or certain medicines.



Read the instructions before starting the machine.



Clear the area from stones etc. before cutting.



Never carry passengers.

WARNING!
This machine can cut off hands and feet, and eject objects. Failure to follow the safety instructions can lead to severe injury.

- Watch out for traffic when working close to a road, or crossing one.
- Be careful when rounding a fixed object so that the blades do not hit it. Never drive intentionally over a foreign object.
- The machine is heavy and can cause very severe crush injuries. Be extra careful when loading it on a trailer or truck.
- Be careful when pulling a load or using heavy equipment.

  a. Only use approved tow hooks.

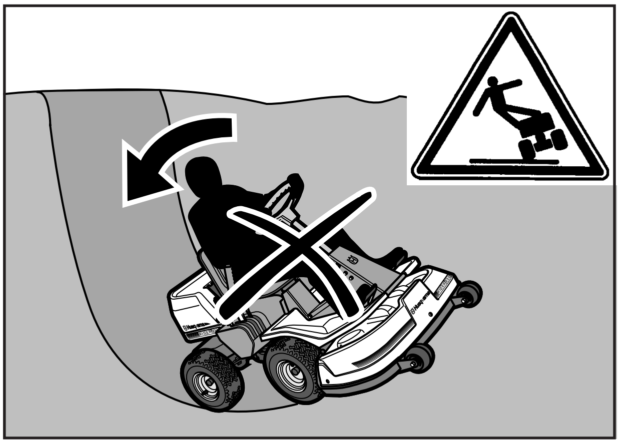
  b. Limit the load to what you can manage safely.

  c. Do not make sharp turns. Be careful when reversing.

  d. Use counterweights or wheel weights when indicated in the instructions.

Driving on slopes

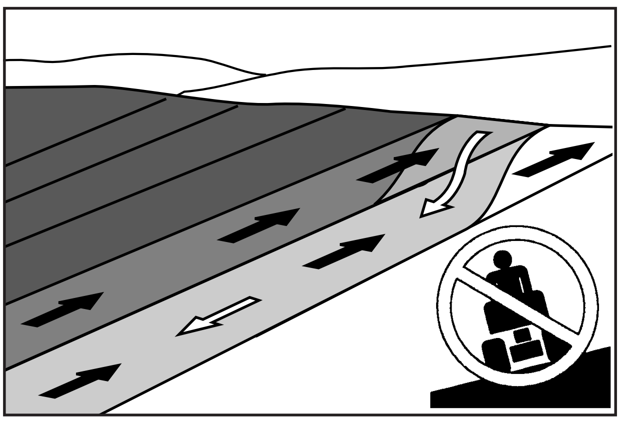
Driving on slopes is one of the situations where there is the most serious risk that the driver can loose control or that the machine tips over, which can cause severe injuries or be fatal. All slopes require extra care. If you cannot reverse up the slope or if you feel uncertain avoid cutting it.



Be extra careful when driving on slopes.

Do as follows:

- Remove obstacles such as stones and branches etc.
- Cut upwards and downwards, not sideways.
- Look out for and avoid driving over furrows, holes or mounds. On uneven surfaces it is easier for the machine to tip over. High grass can conceal obstacles.
- Drive slowly. Select a low gear to avoid having to stop and changing gear. It is also easier to use the gear to brake in a low gear.
- Follow the manufacturer's recommendations on wheelweights or counterweights to increase stability.
- Be extra careful with the grass collector or other equipment which can alter the stability of the machine.
- Always drive smoothly and slowly on slopes. Avoid sudden changes of speed or direction.
- Avoid starting or stopping on a slope. If the tyres begin to skid switch of the blades and drive slowly down the slope.



Cut slopes upwards and downwards, not sideways.

Do *not* do the following:

- Avoid unnecessary turns on slopes, and if turning is necessary turn slowly and gradually, downwards if possible.

- Do not cut close to edges, ditches or banks. The machine can suddenly tip over if a wheel goes over the edge of a drop or a ditch, or if a bank gives way.
- Do not cut wet grass. It is slippery and the tyres can loose their grip so that the machine slides.
- Do not try to stabilise the machine by placing one foot on the ground.

Children

Tragic accidents can occur if the driver does not pay attention to children in the vicinity. Children are often attracted to the machine and the work of mowing. Never assume that children stay where you last saw them.

- Keep children away from the mowing area and under the supervision of another adult.
- Be on your guard and switch off the machine if children come into the work area.
- Before and during reversing look behind and down for small children.
- Never allow children to ride on the machine. They can fall off and become seriously injured or obstruct a risky manoeuvre of the machine.
- Never allow children to drive the machine.
- Be extra careful close to corners, bushes, trees or other objects which obstruct your view.

Maintenance

- Petrol/gasoline and petrol/gasoline fumes are toxic and highly inflammable. Be extra careful when handling petrol/gasoline.

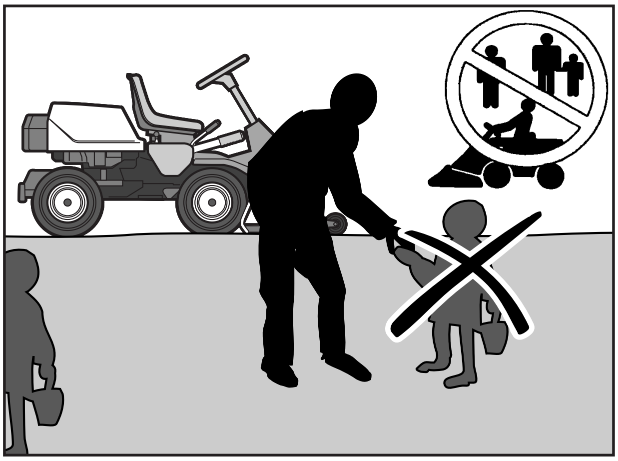
  a. Store the fuel in containers approved for this purpose.

  b. Never fill up the machine with fuel when the engine is running. Let the engine cool before filling up with fuel. Do not smoke, or fill up with fuel in the vicinity of naked flames or sparks.

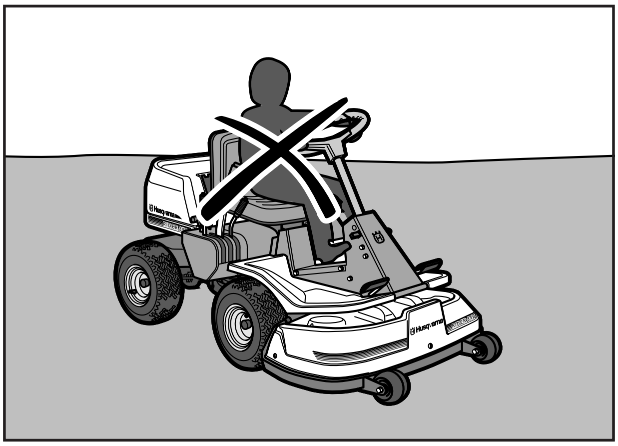
  c. Never fill up with fuel indoors.

  d. If leakage has occurred in the fuel system the engine must not be started until this is rectified.

  e. Never store the machine or fuel containers indoors if there are naked flames, such as in a boiler room or where there is electrical equipment which can emit sparks.
- Check the fuel level each time before using the machine, and leave space for the fuel to expand since the heat from the engine and hot sun can cause the fuel to run over.



Keep children away from the mowing area.



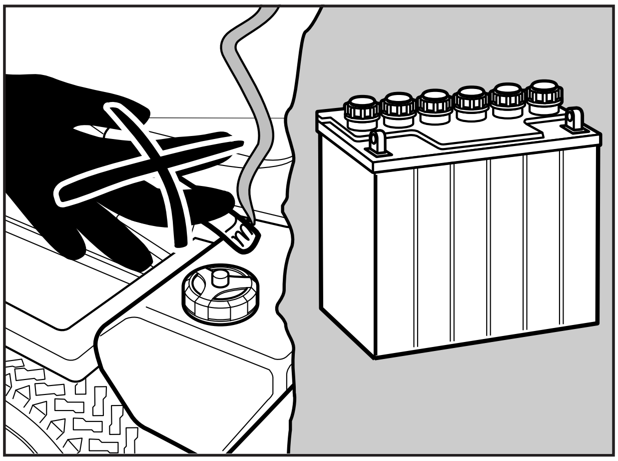
Never allow children to drive the machine.



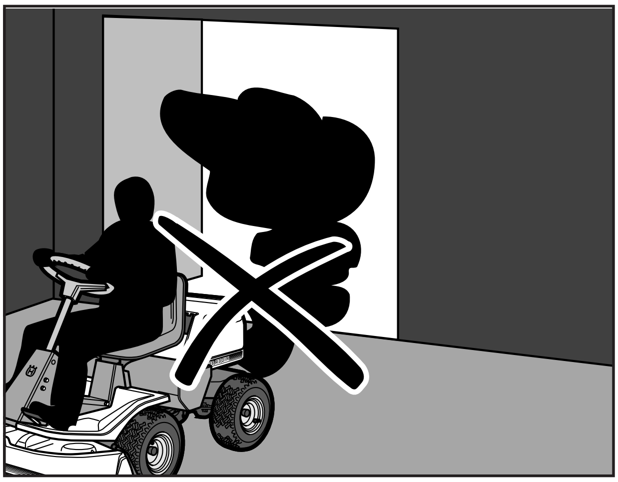
Never fill up with fuel indoors.

SAFETY INSTRUCTIONS

- Avoid overfilling. If fuel has been spilt on the machine wipe it up and wait until it has evaporated before starting the engine. If fuel is spilt on clothes, change them.
- Be extra careful when handling battery acid. Spilling acid on the skin can cause severe burn injuries. Rinse immediately with water. If acid gets into the eyes this can cause blindness. Contact a doctor.
- Be careful with the maintenance of the battery. Explosive gas is formed in the battery. Never handle the battery when smoking or in the vicinity of naked flames or sparks. Otherwise the battery can explode and cause severe injuries.
- Never drive the machine in an enclosed space. The exhaust fumes contain carbon monoxide, an odourless, non coloured, toxic and fatal gas.
- Make sure that bolts and nuts, especially attachment bolts for the blade units are properly tightened and that the equipment is in good order.
- Never alter the safety devices. Check regularly that they function. The machine must not be driven with defective or unmounted safety devices.
- Do not alter the setting of the governor and do not race the engine.
- Reduce the fire risk. Keep the machine clean from grass, leaves and other refuse which fastens in it. Allow the machine to cool before placing it in the storage area.
- Stop and inspect the equipment if you drive over an object. If necessary repair the machine before starting.
- Never make adjustments with the engine running.
- The parts on the grass collector can become worn, damaged and aged, so that moving parts are exposed or so that an object can be thrown out. Check the parts regularly and if necessary replace them with spare parts recommended by the manufacturer.
- The machine is tested for safety and approved only for equipment supplied or recommended by the manufacturer.
- The blades are sharp and can cause cutting injuries. Wrap over the blades or use protective gloves when handling them.
- Check the functioning of the brakes regularly. Adjust and maintain them as necessary.



Never smoke in the vicinity of the battery or the fuel.



Never drive the machine in an enclosed space.



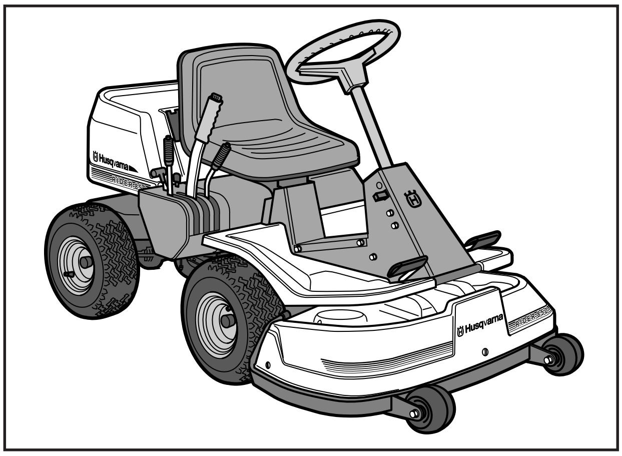
Clean the machine regularly from grass, leaves and other waste.

Presentation

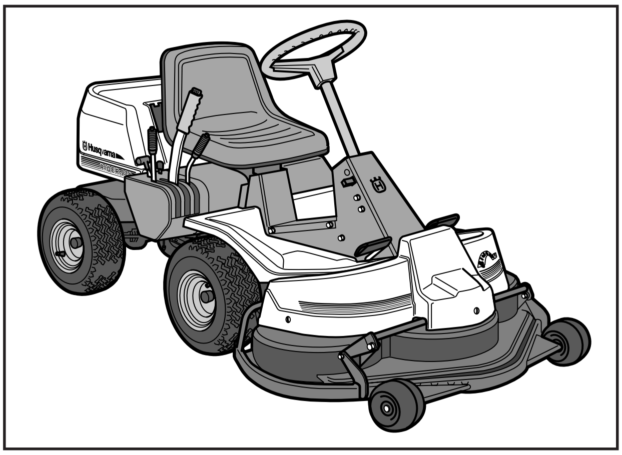
These instructions describe two machine models, Rider 850 and Rider 970.

Both models are fitted with engines from Briggs & Stratton of 10.5, 12.5 and 15.5 hp.

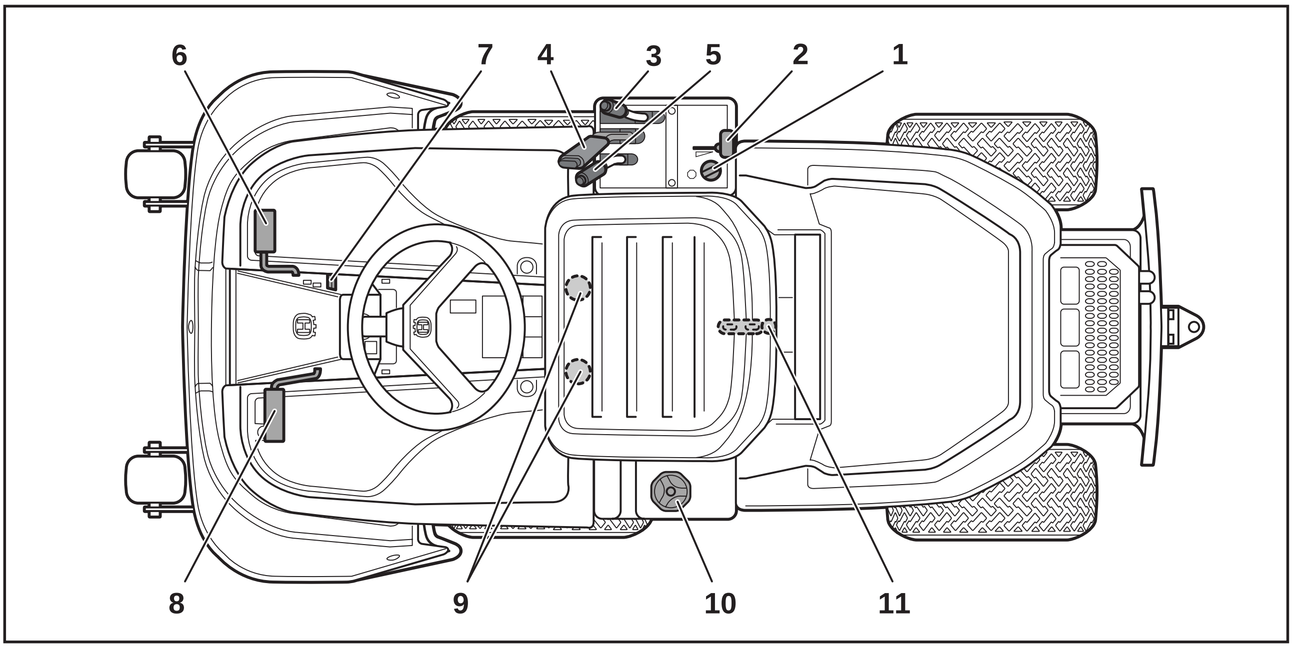
The machines have gearboxes of the in-line type, with 5 forward gears and one reverse gear, which enables selection of the best speed for mowing and transport.



Rider 850 has a cutting unit which throws out the grass at the rear and a cutting width of 850 mm.



Rider 970 is available with three different cutting units: unit with rear ejection or side ejection with a cutting width of 965 mm, and a Bioclip unit with a cutting width of 1030 mm.



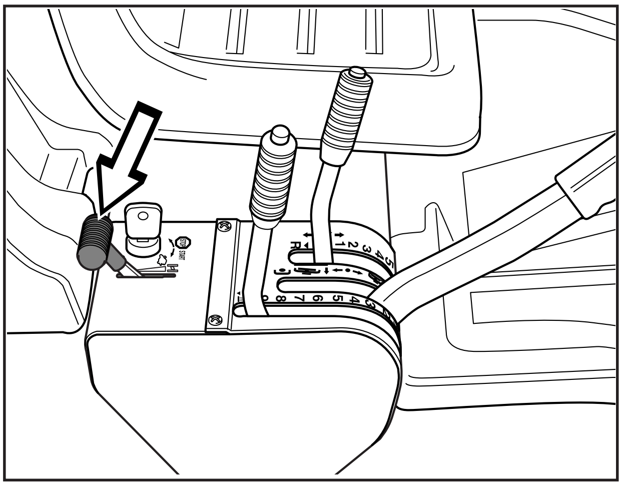
Location of the controls

1. Ignition lock
2. Throttle/Choke lever
3. Adjustment of cutting height
4. Lifting lever, cutting unit
5. Gear shift
6. Brake pedal
7. Lock button for parking brake
8. Clutch pedal
9. Adjustment of seat
10. Fuel tank cap
11. Main lock (under seat)

Throttle and Choke lever

The engine speed is adjusted with the throttle control, and thereby also the rotation speed of the blades.

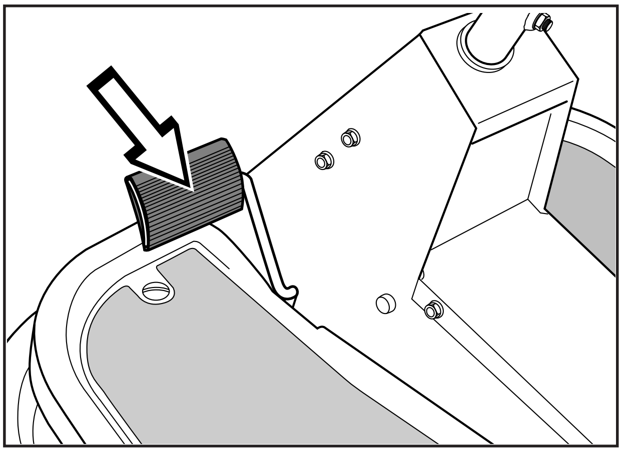
The control is also used to activate the choke function. When the choke is used the engine receives a richer mixture of fuel and air, which simplifies cold start.



Clutch pedal

The clutch pedal disengages the engine and stops forward movement.

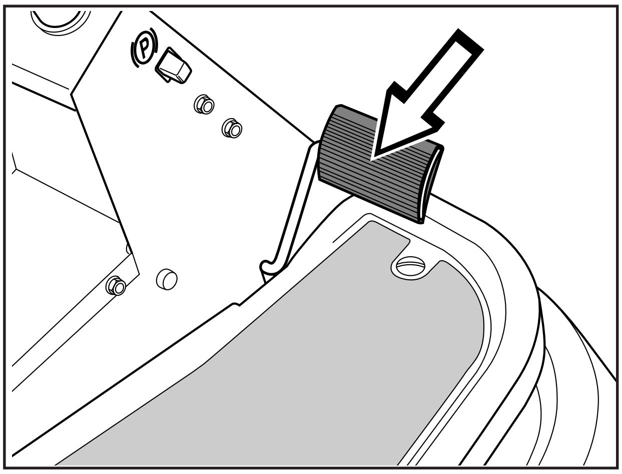
The blades are *not* affected by the clutch pedal.



Brake pedal

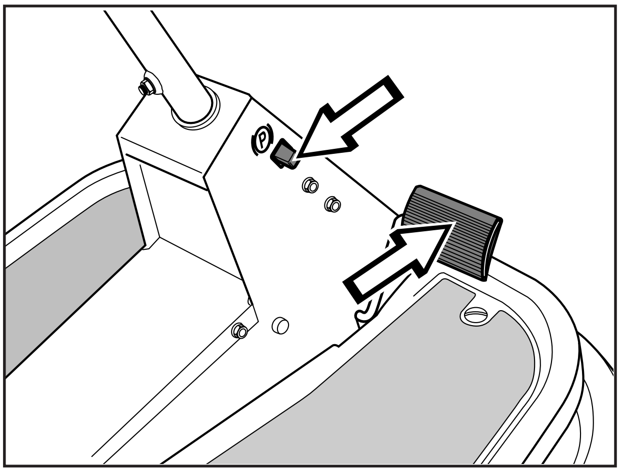
The brake pedal activates a disc brake which is placed on the gearbox and brakes the drive wheels.

When braking the clutch pedal should also be pushed down to achieve best braking power.



Parking brake

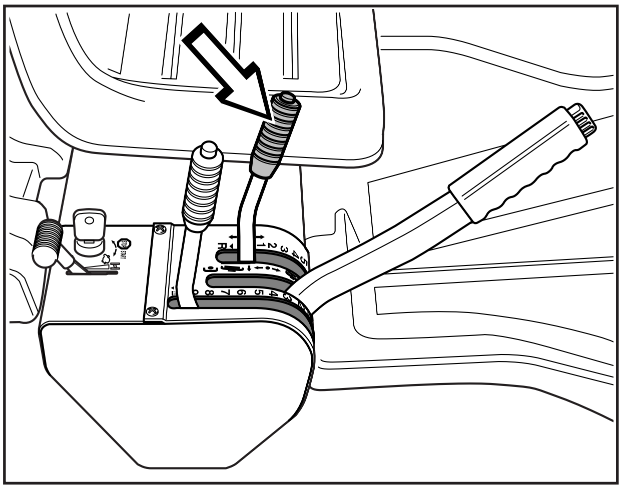
The parking brake consists of a catch which enables the brake to be locked in braking position.



Gear shift

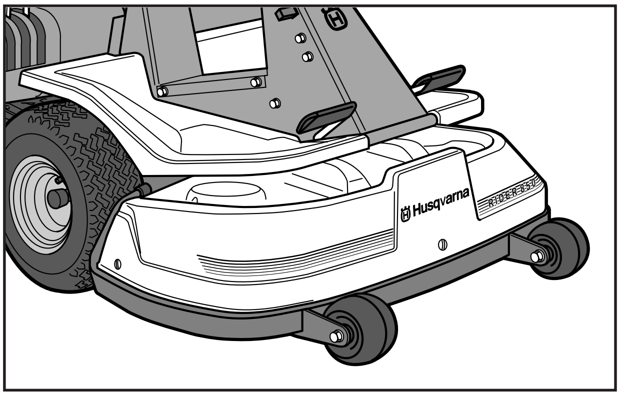
The gearbox is of the in-line type, which implies that gear shifting can be made directly from neutral to fifth gear without stopping in each gear.

The gearbox has five forward gears, neutral, and reverse. When engaging reverse gear the lock button on the gear shift must be pressed.



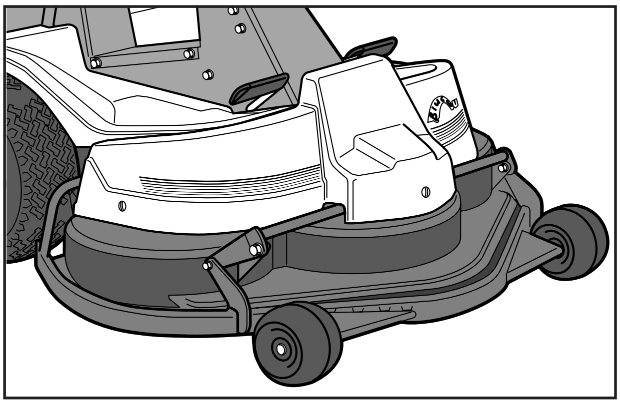
Cutting unit

Rider 850 has a cutting unit with rear ejection, i.e. the grass cuttings are thrown out behind the cutting unit.



Rider 970 can be delivered with a cutting unit which has rear or side ejection. It is also available with a Bioclip unit which cuts up the grass finely by means of cutting it several times before it is returned to the lawn as fertiliser.

The diagram shows a Rider 970 with Bioclip unit.



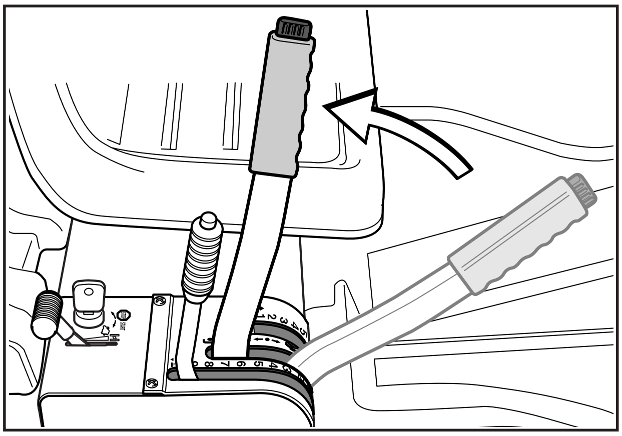
Lift lever for cutting unit

The lift lever is used to set the cutting unit in transport or cutting position.

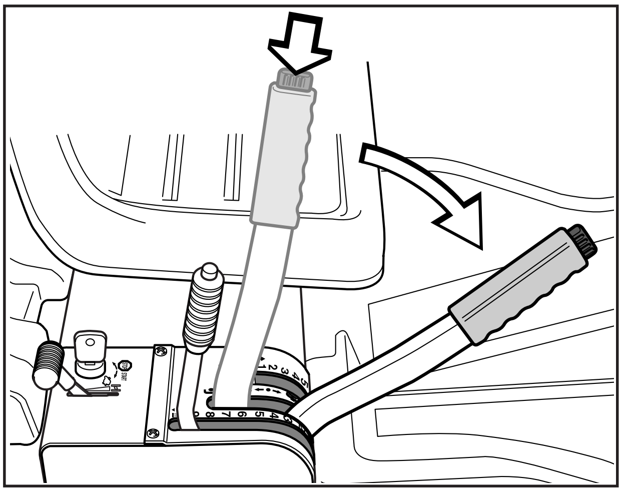
If the lever is pulled back the unit will lift up and the blades stop rotating (transport position).

If the lock button is pressed and the lever is moved forward the unit will lower down and the blades begin rotating (cutting position).

The lever can also be used to temporarily regulate the cutting height, e.g. for a small mound in the lawn.



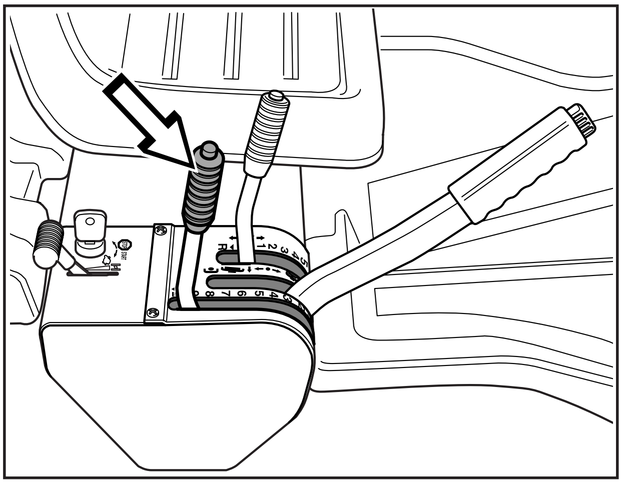
Lifting of the cutting unit (transport position)



Lowering of the cutting unit (cutting position)

Lever for adjustment of cutting height

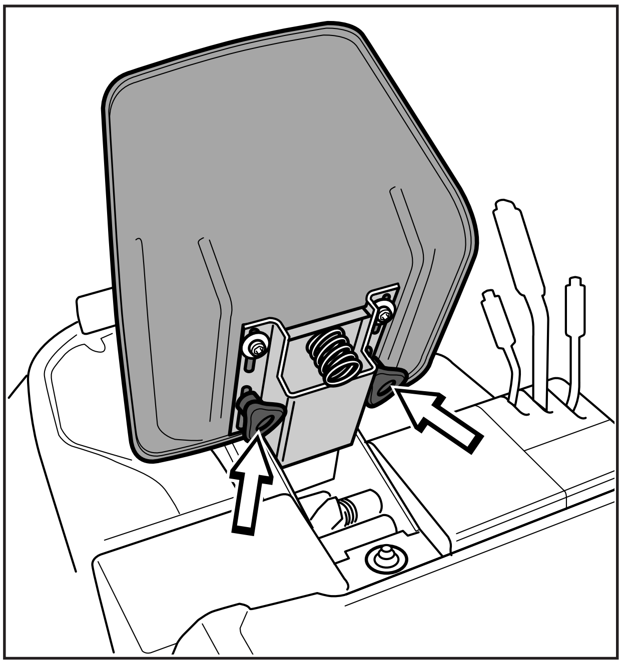
With this lever the cutting height can be adjusted to 9 different positions (40–90 mm, 45–80 mm Bioclip).



Seat

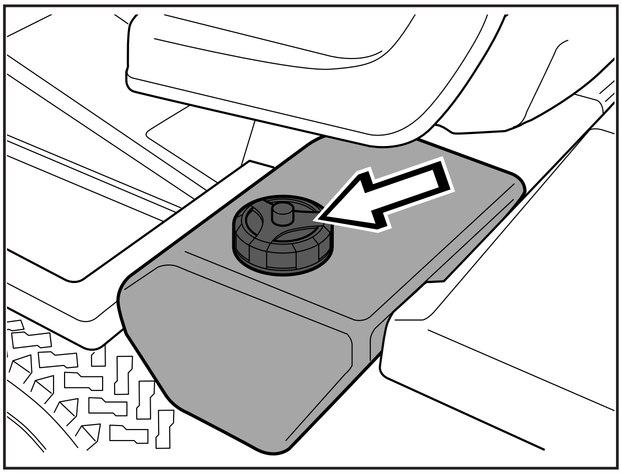
The seat has a jointed attachment on the front edge and can be tipped forward.

The seat can also be adjusted lengthways. Release the wheels under the seat and adjust it forwards or backwards to the required position. Lock the adjustment with the wheels.



Fuelling

The engine should be run on at least 92 octane leaded or unleaded petrol/gasoline (not oil mixed). For USA and Canada at least 87 octane leaded or unleaded petrol/gasoline (not oil mixed).



WARNING!
Petrol/gasoline is highly inflammable. Observe care and refuel outdoors (see safety instructions).

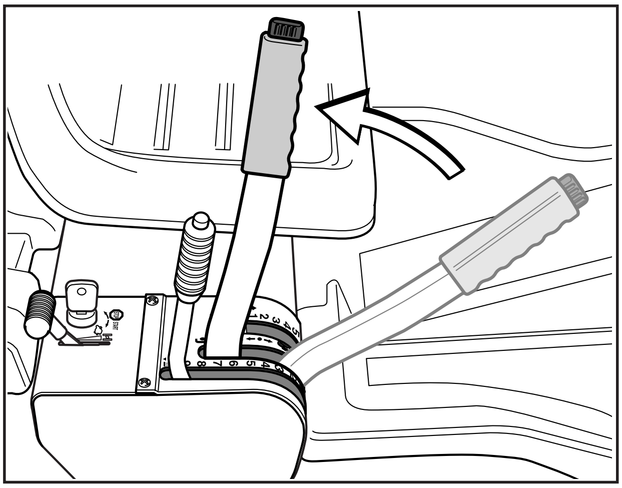
Before starting

- Read the safety instructions and information on the location and function of the controls before starting (see pages 5–13).
- Conduct daily maintenance before starting (see maintenance schedule on page 19).

  Adjust the seat to the required position.

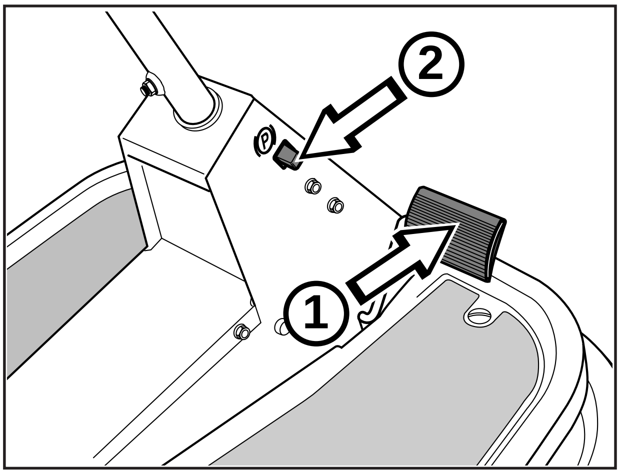
Starting the engine

1. Lift up the cutting unit by pulling the lever backwards to locked position (transport position).

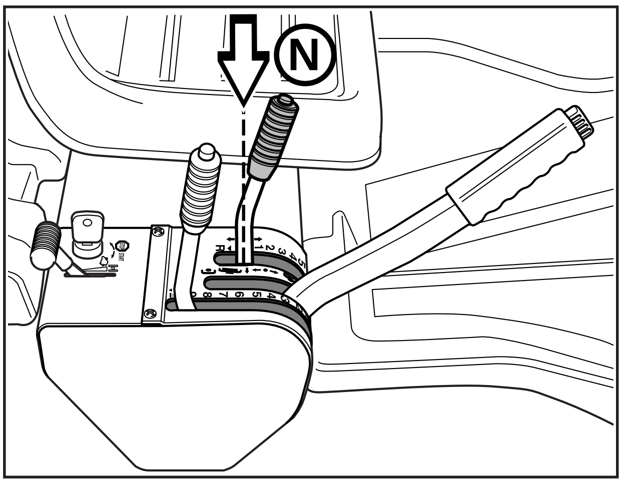


2. Apply the parking brake. This is done as follows:
   - Press down the brake pedal (1).
   - Press in the lock button on the steering column (2).
   - Release the brake pedal while the button is held pressed.

   The parking brake lock disconnects automatically when the brake pedal is pressed down.

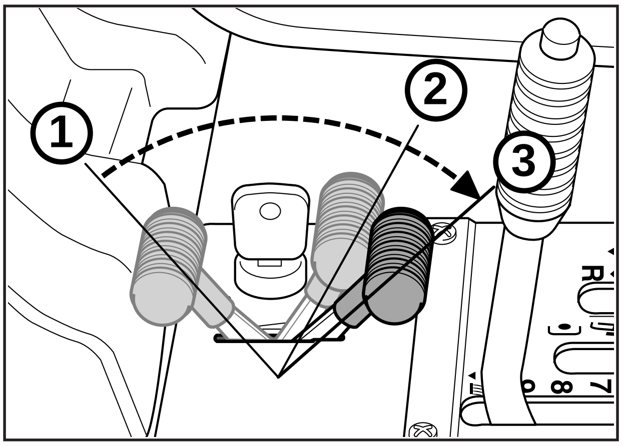


3. Put the gear shift in neutral (N).



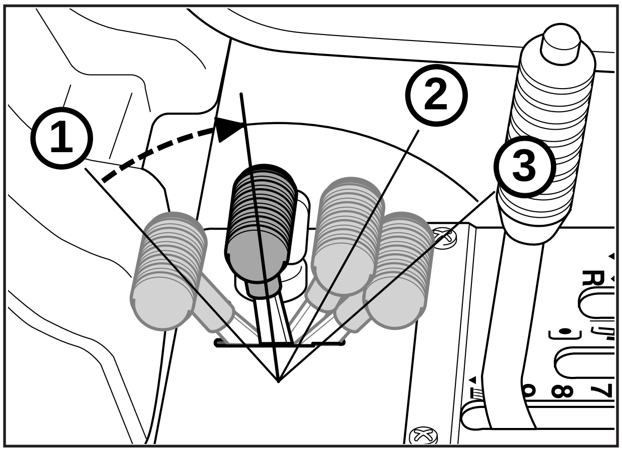
Cold engine:

4. Push the throttle control to position 3 (choke position). In this position the engine receives a richer mixture so that the engine starts more easily.

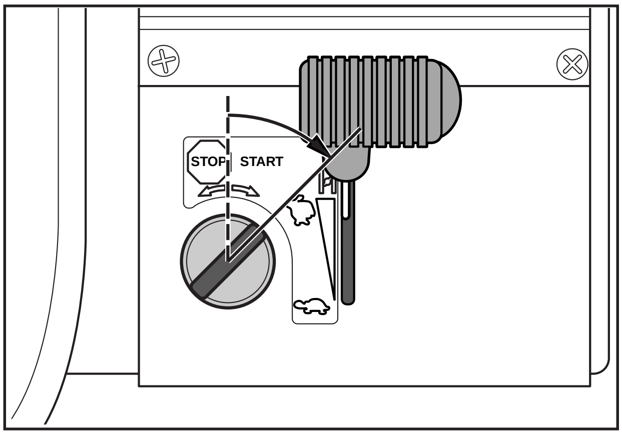


Warm engine:

5. Set the throttle control midway between position 1 and 2.



6. Turn the ignition key to start position.

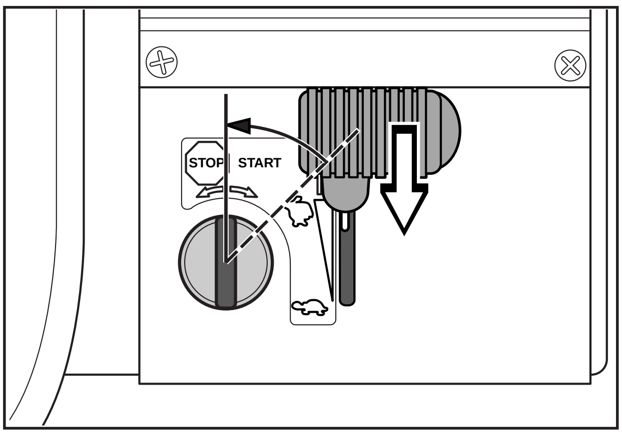


IMPORTANT INFORMATION

Do not run the starter for more than about 5 seconds at a time. If the engine does not start, wait about 10 seconds before trying again.

7. When the engine has started release the ignition key to neutral position.

   Push the throttle control to the required speed. For cutting 3/4 to full throttle.

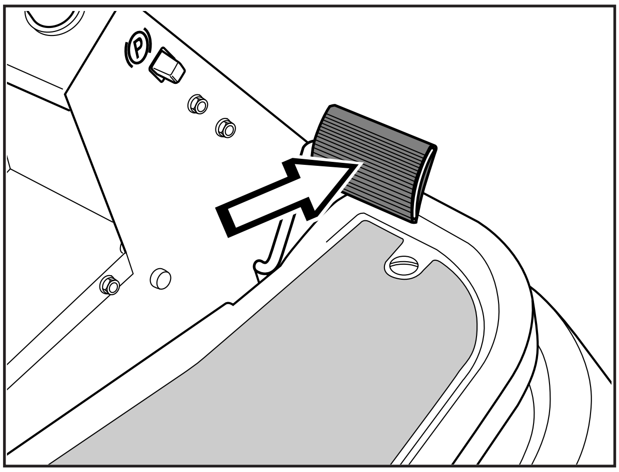


WARNING!

Never run the engine indoors, in enclosed or poorly ventilated areas. The exhaust fumes contain toxic carbon monoxide.

Driving the machine

1. Release the parking brake by pressing the brake pedal.



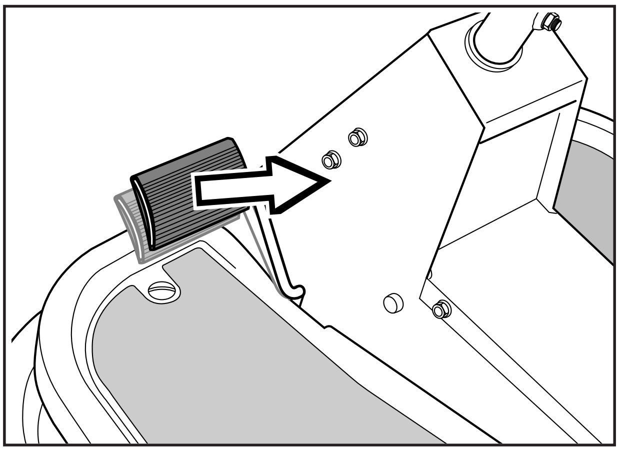
2. Press the clutch and engage the required gear.

   The gearbox has five forward drive positions, neutral, and reverse. To engage reverse gear the lock button must be pressed down.

   - Gears 1–4 are used for mowing.
   - Gears 4–5 are used for transport.

   Starting is possible irrespective of which gear is engaged.

   Carefully release the clutch pedal and drive to the mowing area.



IMPORTANT INFORMATION

Do not change gear from forward drive to reverse while the machine is moving.

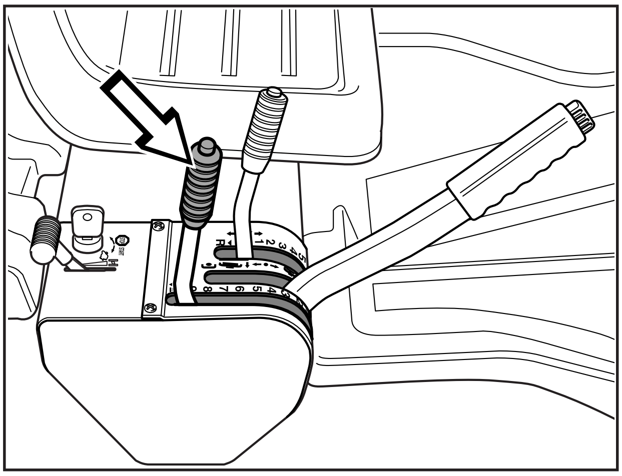
The clutch must be used for each gear change.

Stop the machine before changing for forward drive to reverse, otherwise the gearbox can be damaged.

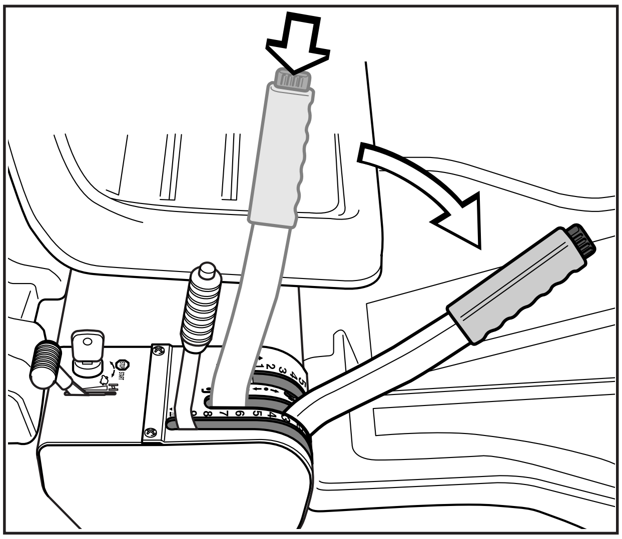
Never use force to engage a gear. If a gear will not engage directly release and push down the clutch again, and then try to engage the gear again.

3. Select the required cutting height (1–9) with the cutting height lever.

   To obtain a uniform cutting height it is important that the tyre pressures are equal on both front wheels (60 kPa).



4. Push in the lock button on the lift lever and lower down the cutting unit.

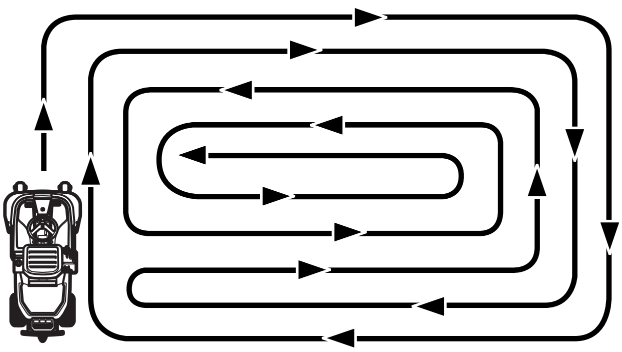


IMPORTANT INFORMATION

The service-life of the drive belts increases considerably if the engine is run at low speed when engaging the blades. For this reason increase the throttle first when the cutting unit has been lowered to the cutting position.

Cutting tips

- Localise and mark stones and other fixed objects to avoid collision.
- Start with a high cutting height and reduce down until the required cutting results are obtained.
- The cutting results are best with a high engine speed (fast rotating blades) and low driving speed (slow moving machine). If the grass is not too high and thick the driving speed can be increased or the engine speed reduced without noticeably affecting the mowing results.
- The best lawns are achieved if the grass is cut often. Mowing becomes more uniform and the grass cuttings become more evenly distributed over the surface. The total time consumption is not greater since it is possible to select a higher driving speed without inferior mowing results.
- Avoid mowing a wet lawn. The mowing results are inferior since the wheels sink down into the soft lawn.
- Hose down the cutting unit with water underneath each time it is used.



Mowing pattern

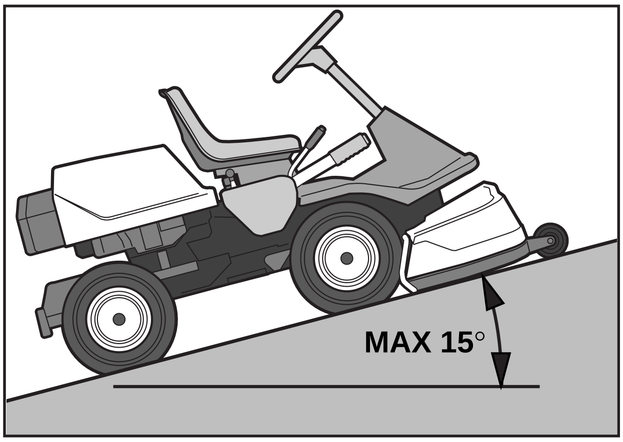
WARNING!
Clear the lawn from stones and other objects which can be thrown out by the blades.

DRIVING

Starting on slopes

1. Apply the parking brake.
2. Push the throttle control to 3/4 position to full throttle position.
3. Push down the clutch and engage first gear.
4. Carefully release the clutch.
5. When the engine begins to drive, release the parking brake.

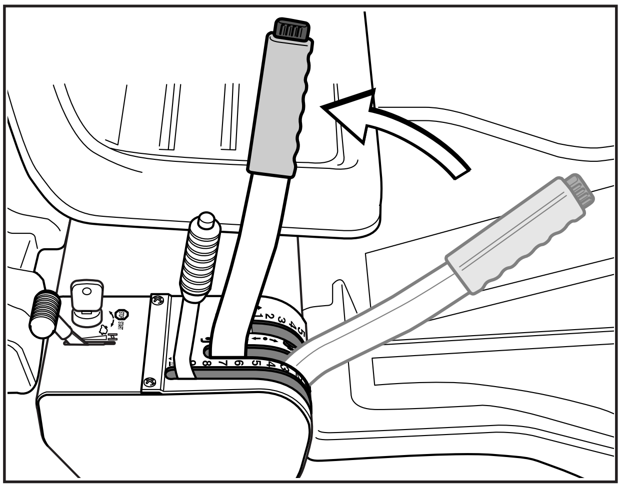
WARNING!
Never drive the machine on ground with a slope of more than 15°. Mow slopes upwards and downwards, never across. Avoid sudden changes in direction.



Stopping the engine

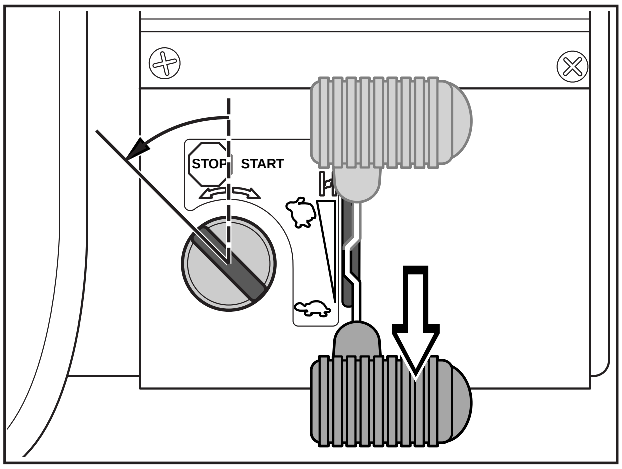
Preferably allow the engine to idle for a minute to obtain normal working temperature before stopping if it has been working hard.

1. Lift up the cutting unit by pulling the lever back to the end position.



2. Pull back the throttle control and move the gear shift to neutral (N).

   Turn the ignition key to the STOP position.



Maintenance schedule

The following is a list of the maintenance which should be conducted on the machine. For the items which are not described in these instructions go to an authorised service workshop.

Maintenance	Page	Daily maintenance before start	Maintenance interval in hours		
			25	50	100
Check the engine's oil level	21	●			
Check the engine's cooling air inlet	21	●			
Check the fuel pump's air filter	21	●			
Check the steering wires	22	●			
Check the brakes	23	●			
Check the battery	23	●			
Check the safety system	23	●			
Check screws and nuts	–	❍			
Check for fuel and oil leakage	–	❍			
Clean the air filter's pre-filter (foam plastic) [2]	24		●		
Check the cutting unit	25		●		
Check the tyre pressures (60 kPa)	28		●		
Change the engine oil[1]	29		●		
Adjust the brakes	23		●		
Check the V-belts	–		❍		
Lubricate joints and shafts [3]	29			●	
Check and adjust the throttle wire	30			●	
Clean the engine's cooling flanges [2,4]	–			❍	
Replace the air filter's pre-filter and paper filter [2]	24				●
Replace the fuel filter	30				●
Replace the plug	–				❍

[1] First change after 5 hours. [2] During dusty conditions cleaning and replacement should be more frequent. [3] For daily use of the machine lubrication should be conducted twice a week. [4] Conducted by authorised service workshop.

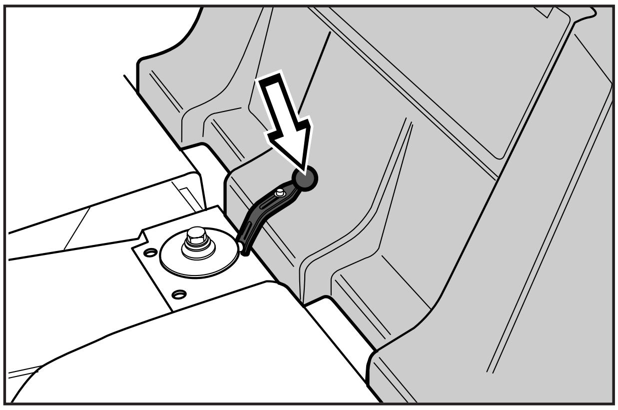
● = Described in these instructions.
❍ = Not described in these instructions.

WARNING!
No service procedures must be conducted on the engine or cutting unit unless:

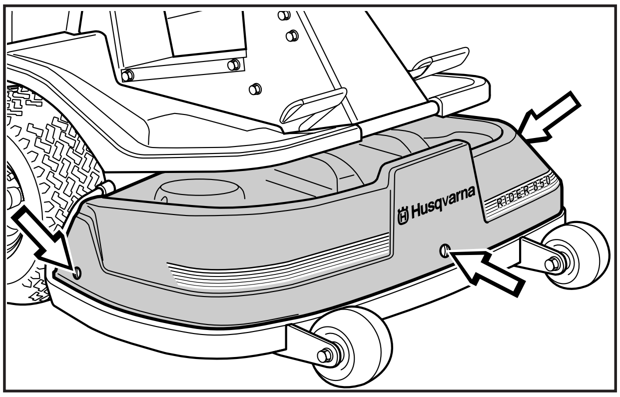
- **The engine is switched off.**
- **The ignition key is removed.**
- **The ignition cable is removed from the plug.**
- **The parking brake is applied.**
- **The cutting unit is disengaged.**

Dismantling of the machine hoods

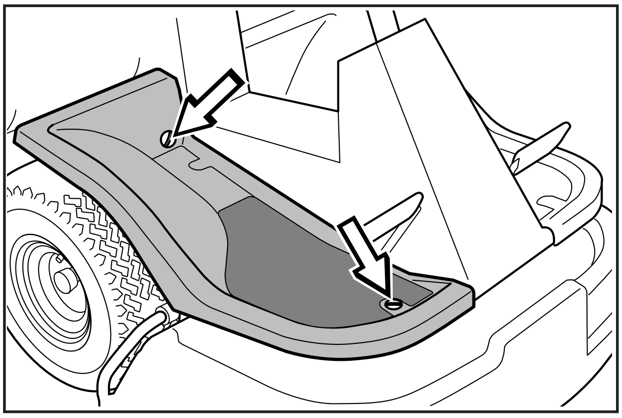
Engine hood
The engine is accessible for servicing when the engine hood is lifted up.
Tilt the seat forward, release the rubber strap under the seat, and tilt the hood backwards.



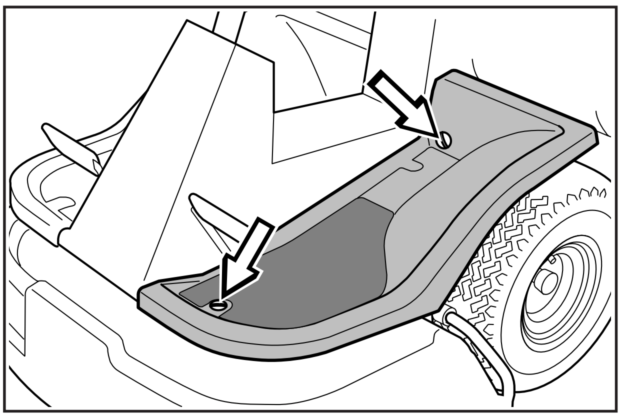
Front hood
Release the screws in the front hood (3) and lift off the hood.



Right-hand fender
Release the screws in the fender (2) and lift off the fender.



Left-hand fender
Release the screws in the fender (2) and lift off the fender.



Check the engine's oil level

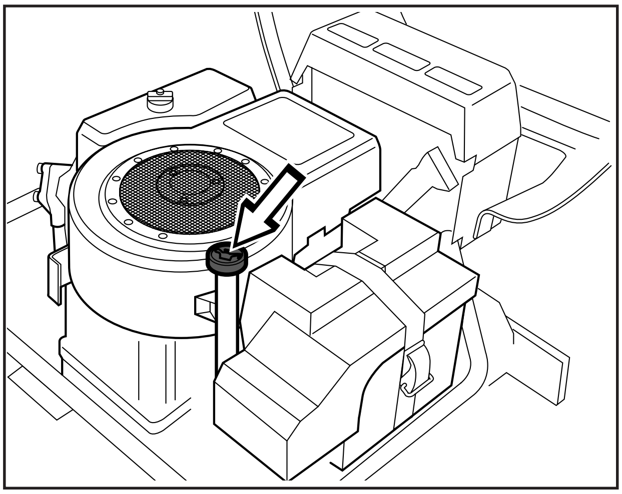
Check the oil level in the engine when the machine is horizontal.

Dismantle the engine hood as per the description on page 20.

Release the dip stick and pull out. Wipe off the oil and insert again.

The dip stick must be fully screwed down.

Now release the dip stick again and pull out. Check the oil level.

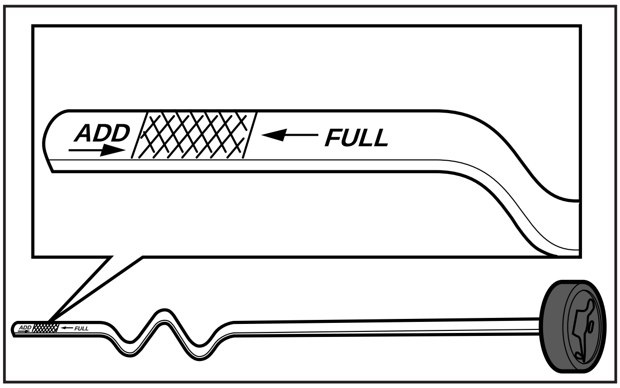


The oil level should lie between the markings on the dip stick. If the level approaches the ADD mark, top up with oil to the FULL mark.

The oil is filled in the same hole as the dip stick is in.

Use engine oil SAE 30 or SAE 10W-30.

The total oil volume in the engine is 1.2 litres.

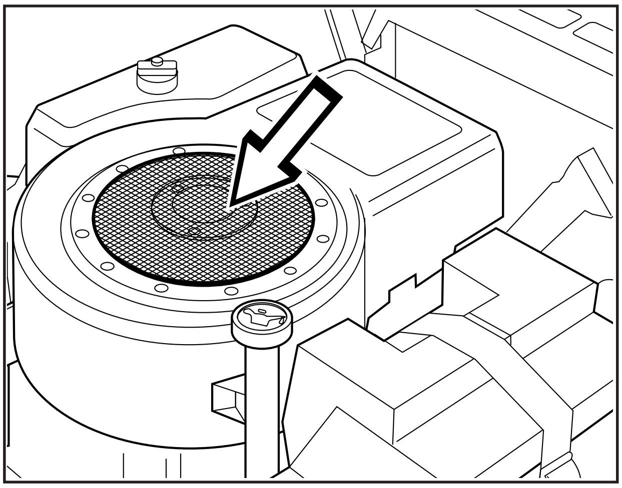


Check the engine's cooling air intake

Dismantle the engine hood as described on page 20.

Check that the cooling intake is free from leaves, grass and dirt.

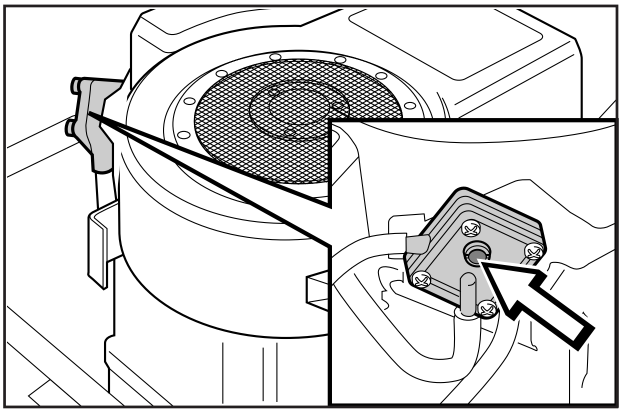
If the cooling intake is blocked this will interfere with the cooling of the engine, which can damage the engine.



Checking of the fuel pump's air filter

Check regularly that the fuel pump's air filter is free from dirt.

The filter can when necessary be cleaned with a brush.



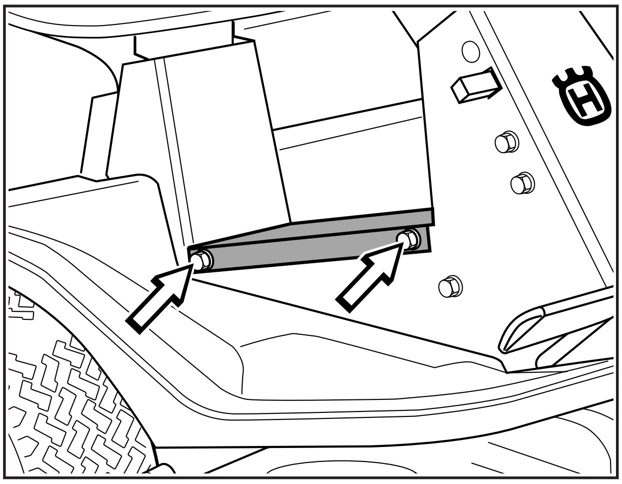
Checking and adjustment of the steering wires

The steering is controlled by means of wires.

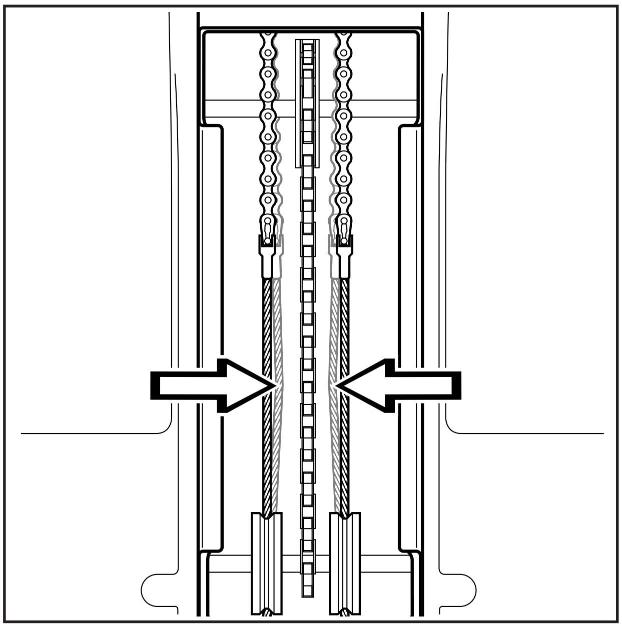
These can in time become slack, which implies that the adjustment of the steering becomes altered.

Check and adjust the steering as follows:

1. Dismantle the frame-plate by releasing the screws (two on each side).



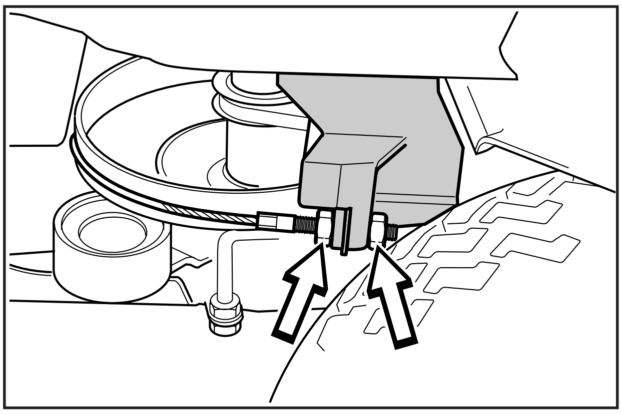
2. Check the tension of the steering wires by pushing them together as shown in the diagram. It should be possible to push them together so that the distance between them is half as much, without using unnecessary force.



3. When necessary the wires can be tensioned by tightening the adjusting nuts, one on each side of the steering rim.

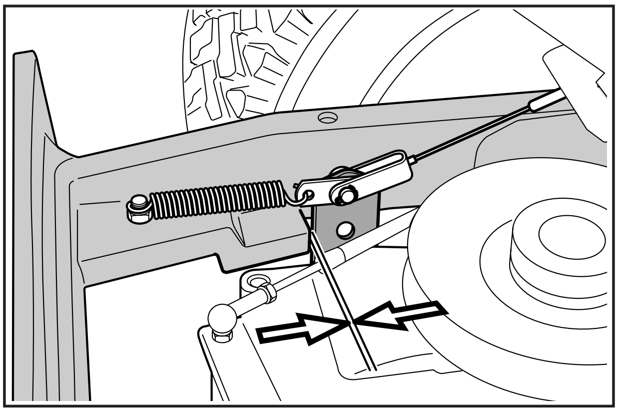
   Do not tension the wires too tightly, they should only be *tightened* up to the steering rim.

   Check the wire tension on completion of the adjustment as per item 2.



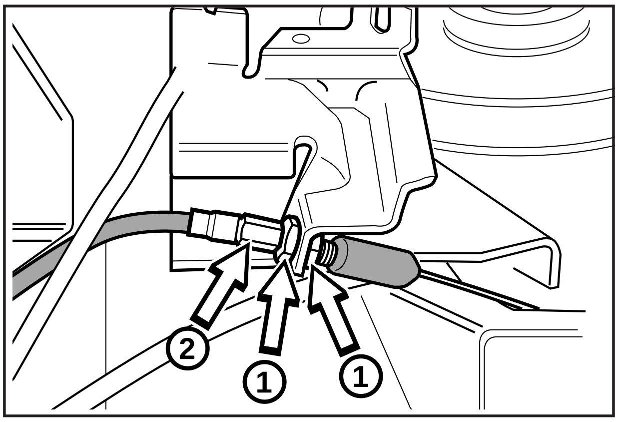
Checking the brake

The brake is of the disc brake type and is fitted on the gearbox.
Check that the brake is correctly adjusted by measuring the distance between the brake lever and the front edge of the recess on the chassis.
The distance should be 0–1 mm when the brake is not applied.



Adjusting the brake

1. Release the lock nuts (1).
2. Tension the wire with the adjusting screw (2) so that the distance between the brake lever and the front edge of the recess on the chassis is 1 mm.
3. Tighten the lock nuts (1) after adjustment.

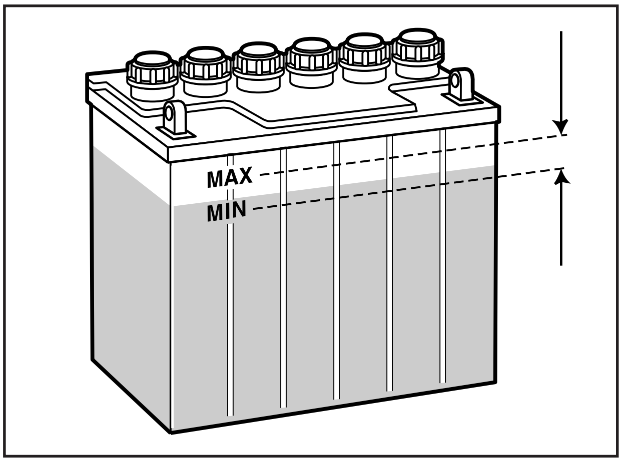


> **WARNING!**
> **Poorly adjusted brakes can result in reduced braking power.**

Check the level of the battery acid

Check that the level of the battery acid lies between the markings. Top up the cells with distilled water only.

> **WARNING!**
> **Procedures on contact with acid**
>
> **External:** Rinse well with plenty of water.
>
> **Internal:** Drink large quantities of water or milk. Contact a doctor as soon as possible.
>
> **Eyes:** Rinse well with plenty of water. Contact a doctor as soon as possible.
>
> **Batteries emit explosive gas. Sparks, flames and cigarettes must absolutely not be brought into the vicinity of the battery.**



Check the safety system

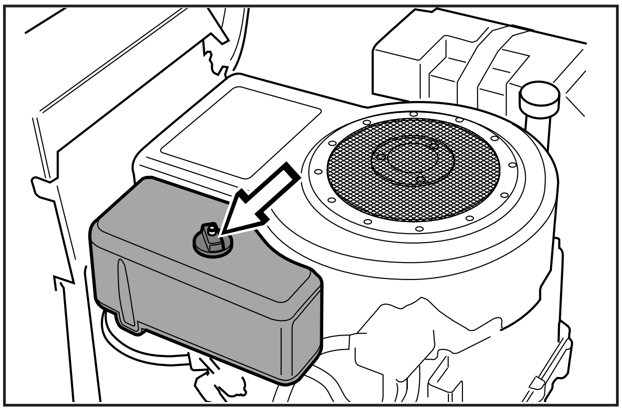
The machine is equipped with a safety system which prevents starting the cutting unit or driving the machine unless someone is sitting in the seat. Check daily the safety system functions.

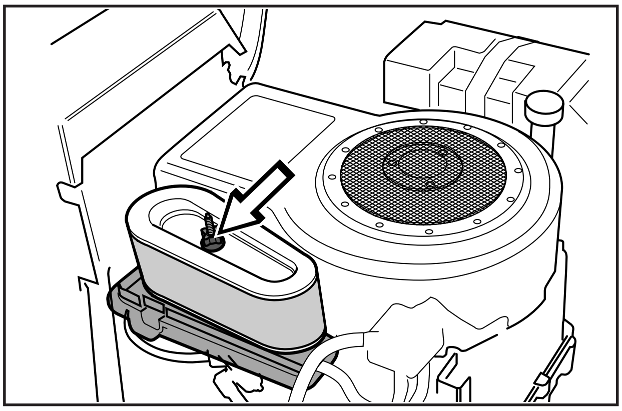
Replacing the air filter

If the engine seems to lack power or goes irregularly the reason may be that the air filter is clogged. It is therefore important to replace the air filter at regular intervals (see maintenance schedule on page 19 for correct service interval).

The air filter is replaced as follows:

1. Dismantle the engine hood as described on page 20.
2. Remove the air filter housing's plastic cover by releasing the wing-nut.
3. Remove the wing-nut on the air filter and lift off the paper filter with pre-filter.



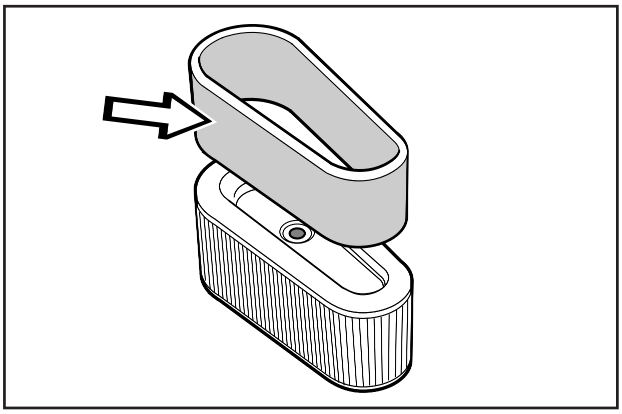


4. Pull off the foam plastic pre-filter from the paper filter and wash clean in mild detergent.

   Squeeze it dry in a clean cloth.

   Drench it with new engine oil. Wrap the filter in an absorbent cloth and squeeze out excess oil.

   Replace the paper filter if it is clogged with dirt.



IMPORTANT INFORMATION

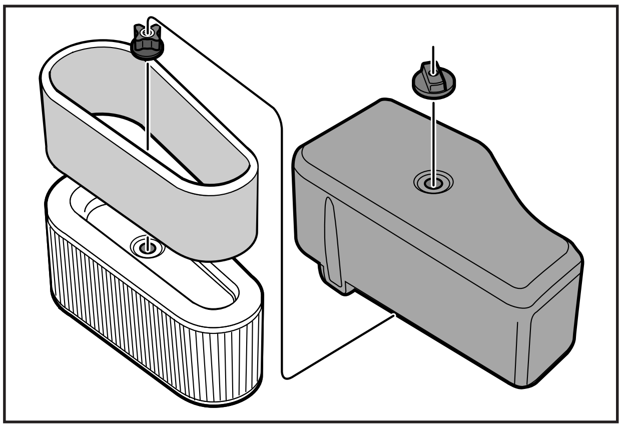
Do not use compressed air to clean the paper filter.

5. Fit the air filter as follows:

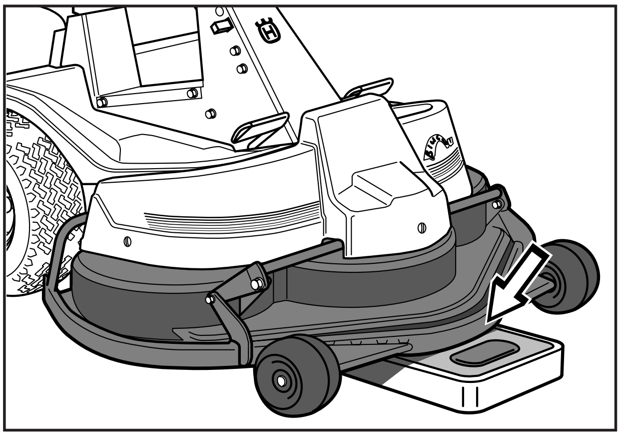
   Push the pre-filter over the paper filter.

   Fit the paper filter with pre-filter in the air filter housing and tighten the wing-nut.

   Replace the plastic cover over the air filter housing and tighten the wing-nut.



Checking and adjustment of the cutting unit's ground pressure Rider 970

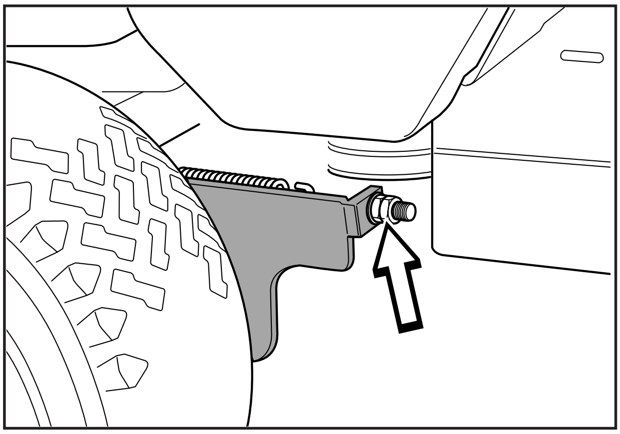


To achieve the best cutting results the cutting unit should follow the underlying surface without pressing too hard against it.

The pressure is adjusted with a screw on each side of the machine.

Adjusting of the cutting unit's ground pressure is conducted as follows:

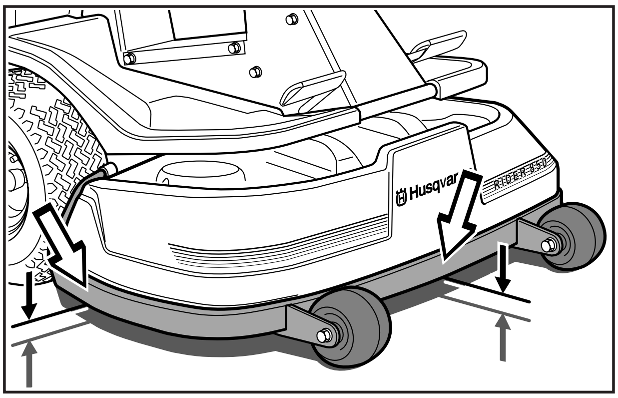
1. Place a set of bathroom scales under the cutting unit's frame (front edge) so that it rests on the scales. If necessary a block can be placed between the frame and scales so that the support wheels do not bear any weight.



2. Adjust the unit's ground pressure by screwing in or out the adjusting screws located behind the front wheels on both sides.

   The ground pressure should be between 12 and 15 kg.

Checking the cutting unit's parallelism

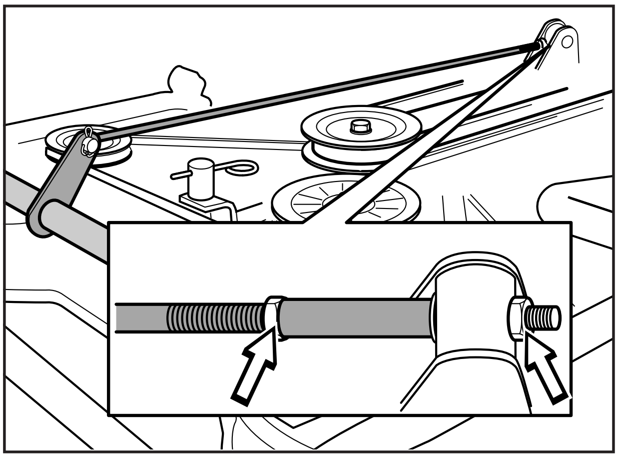


Check the parallelism of the cutting unit as follows:

1. Place the machine on a level surface.
2. Measure the distance from the ground to the edge of the unit, at the front and back of the hood.
   If the values are the same the cutting unit is parallel.

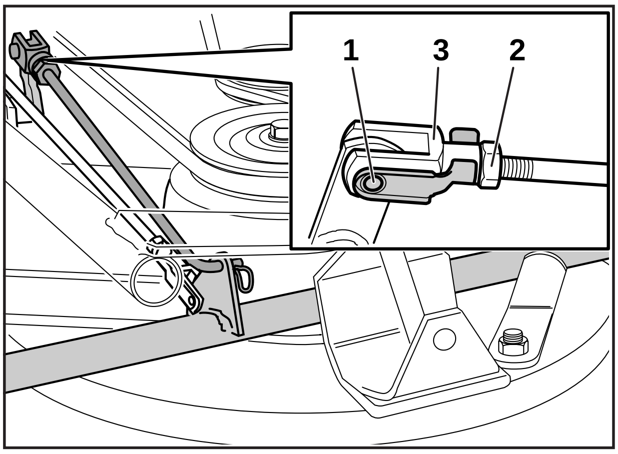
Adjustment of the cutting unit's parallelism

Adjustment of Rider 850



1. Dismantle the front hood and right-hand fender as described on page 20.
2. Vertical adjustment of the cutting unit is made with the adjusting nuts on the back edge of the lift-strut.
3. Raise the cutting unit at the front edge by shortening the lift-strut.
   Lower the cutting unit at the front edge by lengthening the lift-strut.
4. Tighten the nuts against each other after the adjustment.
5. On completion of the adjustment the unit's parallelism should be re-checked.
   Fit the right-hand fender and the front hood.

Adjustment of Rider 970



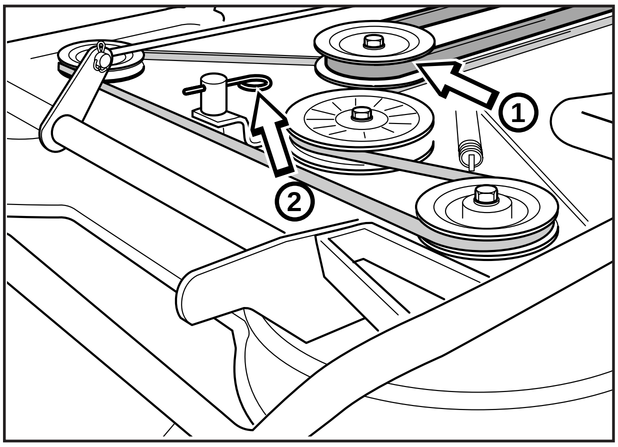
1. Dismantle the front hood and right-hand fender as described on page 20.
2. Release the strut by pulling out the rear pin (1). Lift the rear edge of the hood to relieve the parallel strut.
3. Release the lock-nut (2).
4. Screw out the fork (3) to raise the front edge of the hood.
   Screw in the fork (3) to lower the rear edge of the hood.
5. Tighten the lock-nut after adjusting.
6. On completion of the adjustment the unit's parallelism should be re-checked.
   Fit the right-hand fender and the front hood.

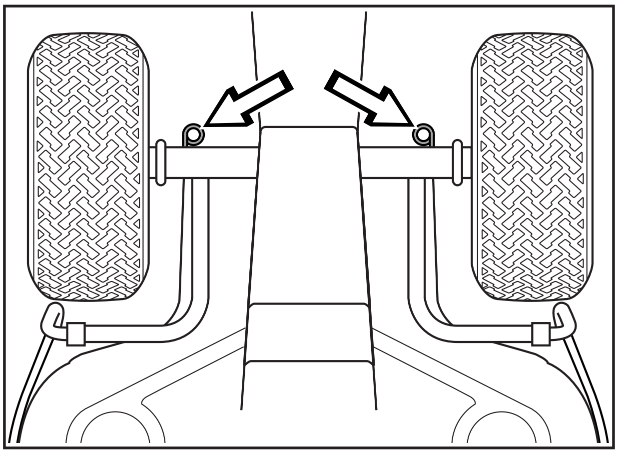
Dismantling the cutting unit

The cutting unit can be released from the machine for cleaning or checking of the blades and screws.

Dismantle the cutting unit on Rider 850 as follows:

1. Dismantle the front hood and right-hand and left-hand fenders as described on page 20.
2. Raise the cutting unit by pulling the lift lever backwards to the transport position.
3. Dismantle the drive belt (1).
4. Lower the cutting unit by pressing in the lift lever's lock button and moving the lever to cutting position, and then setting the lowest cutting height with the cutting height lever.
5. Remove the hair-needle spring (2) from the chain retainer.
6. Remove the lock pins (one on each side) on the rear edge of the unit.





WARNING!
When the lock pins are removed the unit will drop to the ground. Make sure to keep your hands or fingers away from under the unit during dismantling.

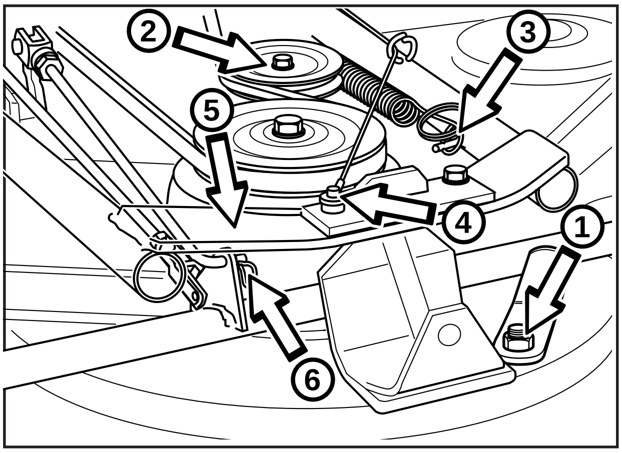
Fitting of the cutting unit takes place in the reverse order to dismantling.

WARNING!
Wear protective glasses when dismantling the cutting unit. The spring which tensions up the belt can go off and cause personal injury.

Dismantle the cutting unit on Rider 970 Bioclip as follows:

1. Dismantle the front hood as described on page 20.
2. Set the cutting height to the highest position. Push the stop (1) in against the crossbar and then set the cutting height to the lowest position. The cutting unit is now locked vertically.
3. Relieve the tensioning roller (2) by disconnecting the spring (3).
4. Push the lock-plate (4) forwards and press down the unit's front edge so that it is released from the unit's frame (5).
5. Push the unit backwards and dismantle the drive belt. Remove the hair-needle spring and release the crossbar (6) from the height adjustment. The unit can now be pulled forward until it releases from the rear suspension.

Fitting of the cutting unit takes place in the reverse order to dismantling.



Checking the blades

To achieve the best mowing results it is important that the blades are undamaged and well-sharpened.

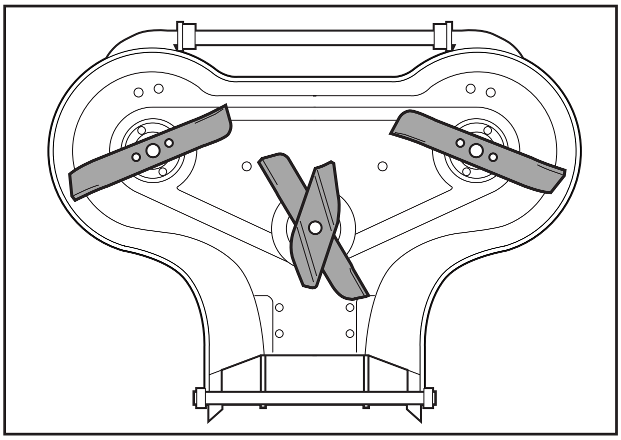
Check that the blades’ attachment screws are tight.

IMPORTANT INFORMATION

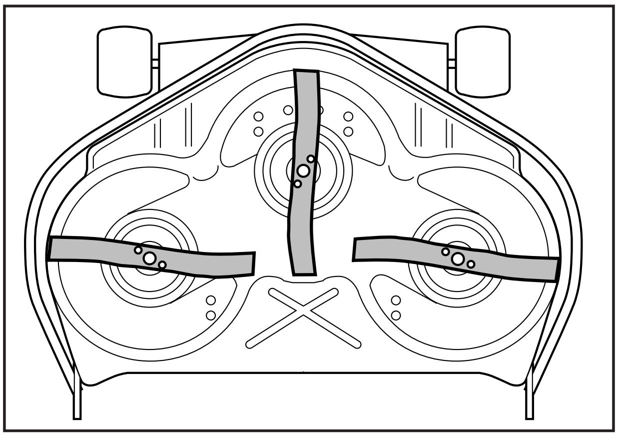
Replacing or sharpening the blades should be conducted by an authorised service workshop.

IMPORTANT INFORMATION

On the Bioclip unit the relative positioning of the blades should always be as shown in the diagram with an angle of 90° between the blades. Otherwise the blades can go against each other and damage the unit.



Cutting unit on Rider 850 (rear ejection)



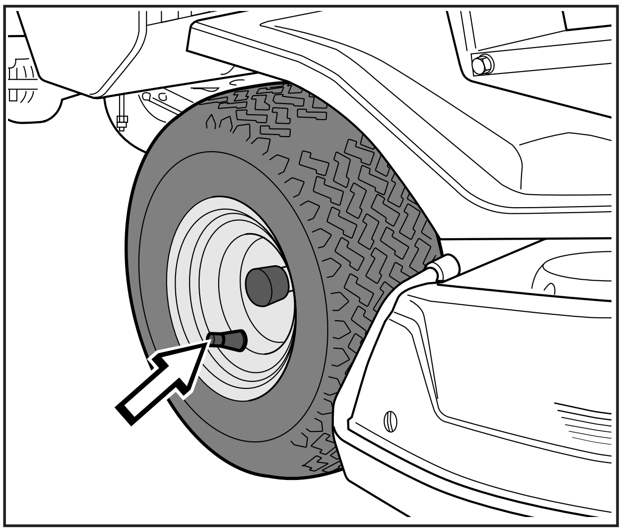
Cutting unit on Rider 979 (Bioclip unit)

Checking the tyre pressure

The tyre pressure should be 60 kPa (0.6 kp/cm^2) all round.
To improve driving the pressure on the rear tyres can be reduced to 40 kPa (0.4 kp/cm^2).
The maximum tyre pressure is 100 kPa (1.0 kp/cm^2).

IMPORTANT INFORMATION

Different tyre pressures on the front tyres will result in the blades cutting the grass at different heights.



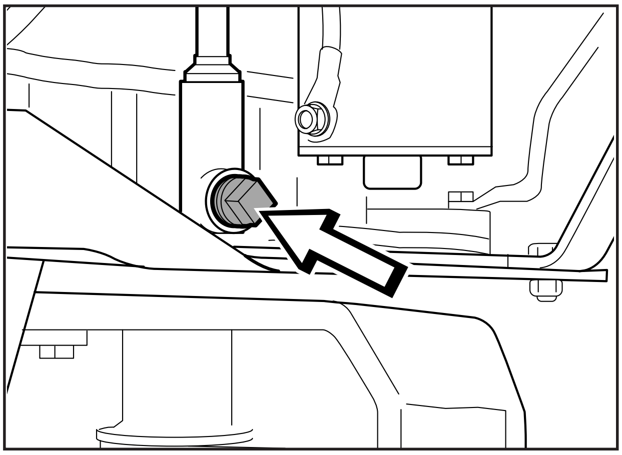
Changing the oil

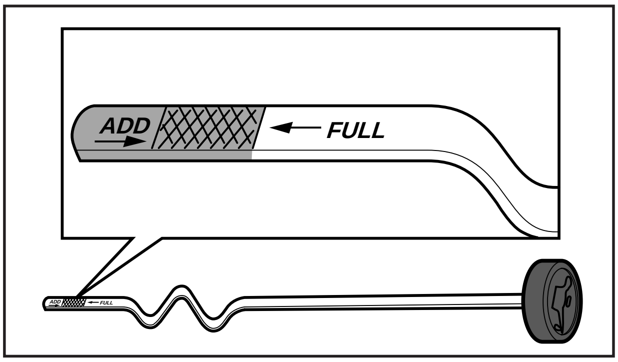
The oil should be changed for the first time after 5 hours of running time. Thereafter it should be changed every 25 hours of running time.

> **WARNING!**
> **Engine oil can be very hot if it is drained off directly after the engine is stopped. Therefore allow the engine to cool down first.**

1. Place a receptacle under the engine's drain plug, located on the left-hand side of the engine.
2. Remove the dip stick and drain plug.
3. Let the oil run out into the receptacle.
4. Fit the drain plug and tighten.
5. Fill up with oil to the FULL mark on the dip stick. The oil is filled in the same hole as the dip stick is in.

   Use engine oil with min. API SF quality and SAE 30 or SAE 10W-30 viscosity grade. The oil volume in the engine is 1.2 litres.
6. Run the engine warm and then check that there is no leakage from the drain plug.





> **IMPORTANT INFORMATION**
>
> **Used engine oil is hazardous to health and environment and must according to law not be poured out on to the ground or in the nature, but must be handed in to a workshop or special station to be taken care of. Avoid skin contact. Wash with soap and water in the event of spillage.**

Lubrication (850)

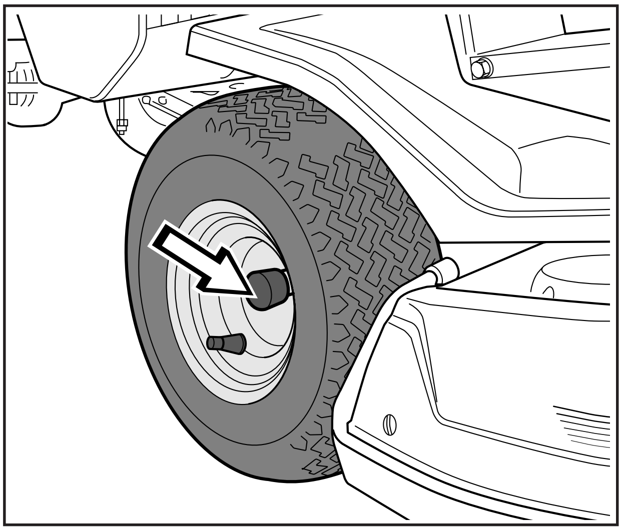
All joints and bearings are lubricated on manufacture with molybdenum sulphide grease. Re-grease with same type of grease. Lubricate the steering and control wires with engine oil.

The machine should be lubricated regularly, and when it is used daily twice a week.

Lubrication of front wheel bearings

1. Remove the plastic cover on the hub.
2. Remove the lock-ring and washer on the front wheel axle.
3. Lift off the wheel.
4. Grease the axle journal with molybdenum sulphide grease.
5. Assemble the parts in the reverse order.

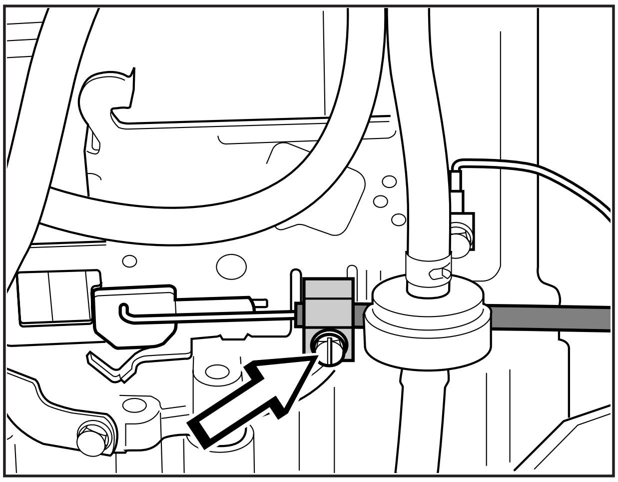
> **IMPORTANT INFORMATION**
>
> **Check that the lock-ring is correctly positioned in the slot.**



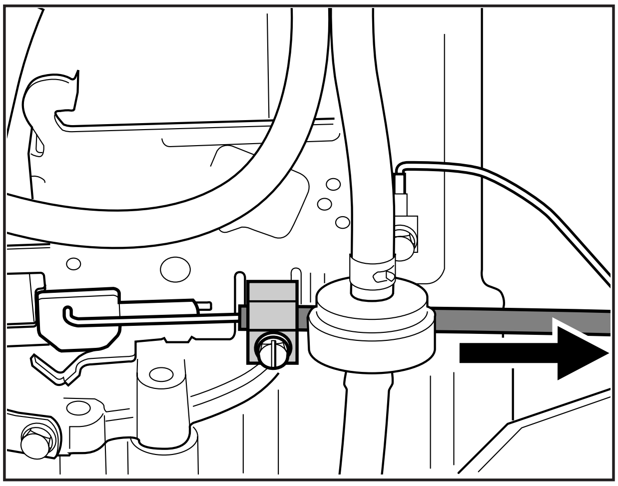
Checking and adjustment of the throttle wire

If the engine does not respond as it should do when the throttle lever is moved or if the top speed is not reached, the throttle wire may need adjusting.

1. Release the clamping screw (see arrow) and push the throttle control to full throttle position.



2. Pull the throttle wire's outer casing to the far right and tighten the clamping screw.

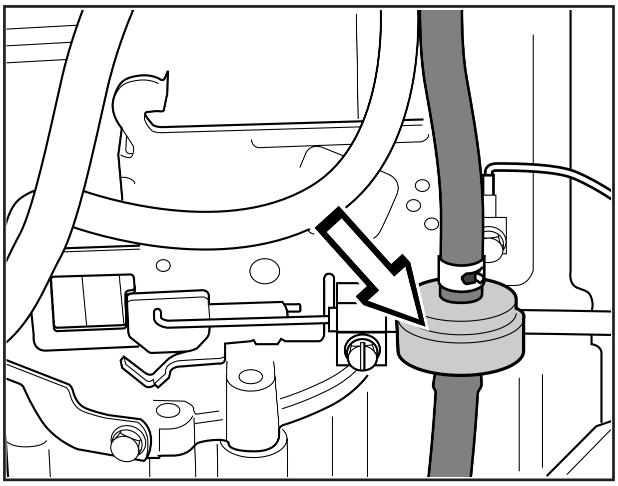


Replacement of the fuel filter

Replace the fuel filter every 100 running hours (once per season) or more frequently if it is clogged.

Replace the filter as follows:

1. Dismantle the engine hood as described on page 20.
2. Move the hose clips away from the filter. Use a pair of flat pliers.
3. Pull off the filter from the hose ends.
4. Press in the new filter on the hose ends. If necessary soap solution can be applied on the filter ends to simplify fitting.
5. Push the hose clips back on the filter.



TROUBLE SHOOTING SCHEDULE

Problem	Procedure
Engine will not start.	• Fuel tank empty. • Plug defective. • Plug connection defective. • Dirt in carburettor or fuel pipe.
Starter does not pull round engine.	• Battery flat. • Bad contact between cable and battery terminal. • Lift lever for cutting unit in wrong position. • Main fuse blown. • Ignition lock faulty. • Gear shift/hydrostat pedal not in neutral.
Engine does not run smoothly.	• Wrong gear, too high. • Plug defective. • Carburettor incorrectly set. • Air filter clogged. • Fuel tank vent blocked. • Ignition setting defective. • Dirt in fuel pipe.
Engine seems to have no power.	• Air filter clogged. • Plug defective. • Dirt in carburettor or fuel pipe. • Carburettor incorrectly set.
Engine overheats.	• Engine overloaded. • Air intake or cooling flanges blocked. • Fan damaged. • Too little or no oil in engine. • Ignition defective. • Plug defective.
Battery does not charge.	• One or more cells faulty. • Bad contact between battery terminals and cables.
Machine vibrates.	• Blades are loose. • Engine is loose. • Imbalance on one or more blades, resulting from damage or inferior balancing after sharpening.
Uneven mowing.	• Blades blunt. • Cutting unit skew. • Long or wet grass. • Grass blockage under hood. • Different tyre pressures on right and left sides. • Over-speeding • Drive belts slipping.

STORAGE

Winter storage

At the end of the season the machine should immediately be put in order for storage, also if it is going to stand idle for more than 30 days. Fuel which is left to stand for long periods (30 days or more) can leave tacky deposits which can block the carburettor and interfere with the engine.

Fuel stabiliser is an acceptable alternative to avoid tacky deposits during storage. If alkylate petrol (Aspen) is used stabiliser is not necessary since this fuel is stable. However, one should avoid changing from standard to alkylate petrol since sensitive rubber parts can harden. Add stabiliser to the fuel in the tank or the storage container. Always use the mixing ratios indicated by the manufacturer. Run the engine for at least 10 minutes after adding the stabiliser so that it will reach the carburettor. Do not empty the fuel tank and carburettor if stabiliser has been added.

WARNING!
Never place an engine with fuel in the tank indoors or in poorly ventilated areas where petrol fumes can come into contact with naked flames, sparks or pilot flames in boilers, hot water heaters, or drying cabinets, etc. It is highly inflammable and negligent usage can cause severe person injury and material damage. Drain off the fuel in an approved container outdoors and well clear of naked flames. Never use petrol for cleaning purposes. Use degreasing agents and hot water instead.

To put the machine in order for storage follow these instructions:

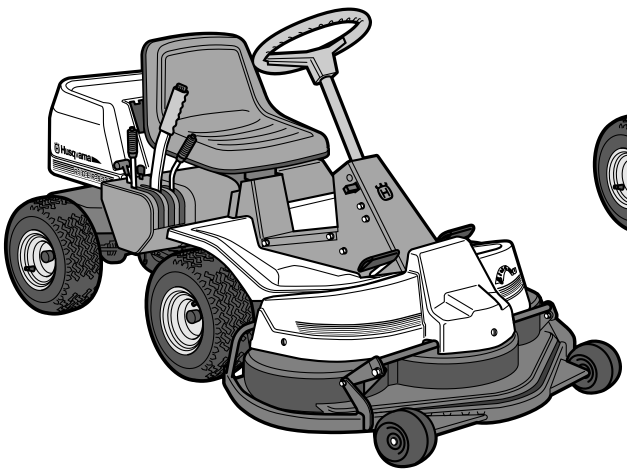
1. Carefully clean the machine, especially under the cutting unit. Touch-up paint damage to avoid rust.
2. Inspect the machine for worn or damaged parts and tighten loose screws and nuts.
3. Change the oil, and take care of the waste oil.
4. Empty the fuel tank. Start the engine and run it until the carburettor is emptied of fuel.
5. Remove the plug and pour in a tablespoon of engine oil in each cylinder. Pull round the engine to distribute the oil and screw the plug back on.
6. Grease all grease nipples, joints and axles.
7. Remove the battery. Clean it, charge it, and store it in a cool place. Protect the battery from low temperatures (below freezing point).
8. Store the machine in a clean and dry place and cover it over for extra protection.

Service

When ordering spare parts state the purchase year, model, type, and serial number.

Always use genuine parts.

Annual inspection or trimming by an authorised service workshop is a good way of getting the best out of your machine the next season.





Dimensions	Rider 850	Rider 970
Length	2000 mm	2145 mm
Width	960 mm	1050 mm (970-15.5), 1260 mm (970-15.5S) 1120 (970-Bioclip)
Height	1060 mm	1060 mm
Unladen weight	225 kg	240 kg
Wheel base	820 mm	855 mm
Track	610 mm	Front 715 mm, rear 610 mm
Tyre size	16 x 6.50 x 8	16 x 6.50 x 8
Tyre pressure, front & rear	60 kPa (0.6 kp/cm^2)	60 kPa (0.6 kp/cm^2)
Max. gradient	15°	15°

Engine

Manufacture	Briggs & Stratton model 28B707 type 0139, trim 01 (850-10.5) Briggs & Stratton model 286707 type 0184, trim 01 (850-12.5)	Briggs & Stratton model 28N707 type 0122, trim 01
Power	7.7/10.5 kW/h.p.(850-10.5) 9.2/12.5 kW/h.p. (850-12.5)	11.4/15.5 kW/h.p.
Displacement	362 cm^3 (850-10.5) 465 cm^3 (850-12.5)	465 cm^3
Fuel	Min. 92 octane leaded or unleaded	Min. 92 octane leaded or unleaded
USA & Canada	Min. 87 octane leaded or unleaded	Min. 87 octane leaded or unleaded
Tank volume	7 litres	7 litres
Oil	SAE 30 or SAE 10W-30 /API SF	SAE 30 or SAE 10W-30 /API SF
Oil volume	1.2 litres	1.2 litres
Start	Electric starter	Electric starter

Electrical system

Type	12 V, negative ground	12 V, negative grounded
Battery	12 V, 20 Ah	12 V, 20 Ah
Spark plug	Champion CJ8 or J8 (850-12.5) electrode gap = 0.7–0.8 mm	Champion CJ8 or J8 electrode gap = 0.7–0.8 mm

Gearbox

Manufacture Europe	Peerless type MST 205-531A	Peerless type MST 205 531A
USA	Peerless type MST 205-530A	Peerless type MST 205 530A
Forward gears	5	5
Reverse gears	1	1
Speed forward	1.85–8.9 km/h	1.85–8.9 km/h
Speed reverse	2.5 km/h	2.5 km/h

Cutting unit

Type	3-blade unit with rear ejection	3-blade unit with side/rear ejection/Bioclip
Cutting width	850 mm	965 mm (970-15.5/15.5S), 1030 mm (Bioclip)
Cutting height	9 pos. 40–90 mm	9 pos. 40–90 mm, 45–80 mm (Bioclip)
Blade diameter	304 mm	350 mm (970-15.5/15.5S), 410 mm (Bioclip)

NOISE LEVEL	100 dB(A)	100 dB(A)

We reserve the right to change technical specifications without prior notice.

Note that no legal claims are valid on the basis of information in this manual.

Use only genuine parts for repairs. The warranty is not valid if non genuine parts are used.